

Virginia
Wildlife

MARCH 1963

VOLUME XXIV / NUMBER 3

20 CENTS



Virginia Wildlife

*Dedicated to the Conservation of
Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia*

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia



COMMONWEALTH OF VIRGINIA

ALBERTIS S. HARRISON, JR., Governor

Commission of Game and Inland Fisheries

COMMISSIONERS

T. D. WATKINS, *Chairman* Midlothian
J. C. AARON Martinsville
H. G. BAUSERMAN, SR. Arlington
A. REE ELLIS Waynesboro
R. R. GUEST King George
R. G. GUNTER Abingdon
J. C. JOHNSON Newport News
DR. E. C. NETTLES Wakefield
I. T. WALKER, JR. Norfolk
HOLMAN WILLIS, JR. Roanoke

ADMINISTRATIVE OFFICERS

CHESTER F. PHELPS, *Executive Director*

RICHARD H. CROSS, JR. *Chief, Game Division*
ROBERT G. MARTIN *Chief, Fish Division*
LILLIAN B. LAYNE *Chief, Fiscal Division*
JAMES F. MCINTEER, JR. *Chief, Education Division*
JOHN H. McLAUGHLIN *Chief, Law Enforcement Div.*

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second St., Richmond 13, Va.

JAMES F. MCINTEER, JR. *Editor*
ANN E. PILCHER *Editorial Assistant*
LEON G. KESTELOO *Photographer*
HARRY L. GILLAM *Circulation*

MARCH

Volume XXIV/Number 3

IN THIS ISSUE

PAGE

Editorial: Those Men Behind the Badges.....	3
Conquest, Survival and Enjoyment.....	4
Trout Fishermen Aren't Crazy.....	5
Long Lived the King.....	6
Quail Nests and Fall Coveys.....	7
Two Story Fish Lake.....	9
Tips on Camera Stalking.....	10
Worn with Pride.....	12
Conservationgram.....	13
Wardens At Work.....	14
Weston Refuge.....	16
Game Bird Habitat.....	18
The Word "Pure" Is The Key.....	20
Bird of the Month: The Bobwhite Quail.....	21
Youth Afield.....	22
Drumming Log.....	24
On The Waterfront.....	25
Virginia Boating Safety Regulations.....	26
Back Cover: Boat Equipment Chart.....	28

COVER: Few of our bird friends look so trim and sleek as the cedar waxwing, which derives its name from the colorful appendages on the secondary wing feathers that look so much like drops of bright red sealing wax. Waxwings travel in flocks, and feed mainly on fruits, fresh and dried, the year 'round. Our photographer: Karl Maslowski, Cincinnati.

SUBSCRIPTIONS: One year, \$1.50; three years, \$3.50. Give check or money order, made payable to the Treasurer of Virginia, to local game commission employee or send to Commission of Game and Inland Fisheries, P. O. Box 1642, Richmond 13, Virginia.

VIRGINIA WILDLIFE is published monthly at Richmond 13, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to Box 1642, Richmond. The editorial office gratefully receives for publication news items, articles, photographs, and sketches of good quality which deal with Virginia's soils, water, forests, and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE. Clearances must be made with photographers or artists to reproduce illustrations.

Second-class postage paid at Richmond, Va.

THOSE MEN BEHIND THE BADGES

IT is humiliating to be caught in our transgressions. We naturally resent a reprimand. We seldom are inclined to accept punishment gracefully. And that loyal public servant, the police officer, usually becomes the object of both the wrath and the scorn of those who have been caught, and of those who simply fear that they may be.

Of all people engaged in conservation work, the game warden is most likely to be misunderstood and unjustly maligned. Sometimes his public image is that of a sneaky, arrogant, unfriendly killjoy, rather than that of the helpful and friendly conservation officer which, actually, he usually is.

Sportsmen who get to know their wardens, instead of trying to avoid them, may be pleasantly surprised. Here is what one had to say in a letter to Executive Director Phelps:

A friend and I decided to go grouse hunting. It was his first grouse hunt, and my first in Virginia. As was to be expected, we were like babes in the woods as we tried to follow the book in hunting for suitable grouse habitat. This went on until noon with no success.

Then we had the good fortune to have one of your game wardens find us to check our hunting permits. After we explained our ignorance and our wishes, he took over and gave us a quick education on grouse hunting in the area. He then asked us to follow him, and took us to where he thought we could find game. As a result my companion killed his first grouse, and over a point by his little Britany. I saw some beautiful scenery and, as usual, was in the wrong place every time a grouse went up.

For me, the trip was made when we met that warden. I was impressed by his willingness to help, and his genuine desire for us to succeed. I was also impressed by his pride in his profession and in the area in which he works. He not only talked of the present, but he was thinking of the further possibilities of the area: the turkey future, the Fish for Fun stream, and other things that the Commission is planning. The Fish for Fun stream is a reality, but he wanted more fishermen to know of it and to enjoy it. I want you to know that you have men on your staff who are really working for the things we all want in the field of game management and outdoor resources.

This testimonial is not unusual. Similar compliments and expressions of gratitude come to the Commission offices continually. A fine boat was donated recently to the State of Virginia by a sportsman who requested only that it be named for a retired game warden and used by the Commission in law enforcement work because the donor, over a period of many years, had developed such admiration for the Commission's field men whom he had come to know.

To those who violate the law, the officer will always be the stern, uncompromising "cop." But by others who know them best, game wardens are respected and admired, for their pride in the work they do and for their devotion to a duty that is lonely, unheralded, sometimes dangerous, often unappreciated, but vitally important.

Virginia's game wardens have earned a hearty: *Well done, officers!* And they go right on earning it, day after day. We take this opportunity to say it to them, loud and clear!—J. F. Mc.

Sees Water Problem

I AM sending a short article on conservation of water because, in view of the population explosion and the terrific impact it is making and will continue to make on our water supplies, there should be an awakening to the awareness of the seriousness of the present situation.

When I was recently elected to the Elkton, Virginia, town-council, I was put on a committee intimately related to the above subject—sewage disposal. The more I have studied the matter, and in mentally comparing the problems of my little town of about 1500 people with places like Richmond, Roanoke, etc., the more staggering, to me, becomes the problem of keeping our water supply pure and clear and sparkling.

I live in what is the most beautiful spot on earth, the Shenandoah Valley of Virginia. We have many wonderful trout streams and a winding, scenic river that just cannot be excelled anywhere.

It just cuts me to the quick to ride up and down these streams, or walk along the banks and see dead fish floating along, smelling up the countryside with odors that nature never intended should be there.

Our great industrial plants such as Merck & Co. and Dupont deserve a resounding vote of appreciation for the work they are doing along the lines of keeping our streams clear . . . but, obviously, there is a need for more work by more people and a never relaxing vigil on the part of everyone to keep our water supply clear, clean and sparkling.

M. W. Lough
Elkton, Virginia

Mr. Lough's thoughts on pure water are discussed further in the article "The Word 'Pure' is the Key," which will be found on page 20 of this issue.—Ed.

Identify Lady Grouse

THE letter in a recent edition concerning "how to identify lady grouse" calls to mind a method recently suggested for distinguishing the sexes of guineas. This method was to put fishing worms in the pen and the male guinea would eat the male worm and the female guinea would eat the female worm, thus identifying themselves. How to tell the sex of the worms? Of course, that is another question.

C. G. Rowell
Surry, Virginia

I LIKE your magazine, the articles, the cover each month, and the cause of conservation it espouses. In my estimation VIRGINIA WILDLIFE is among the very best of the "non-professional" hunting-fishing periodicals. The people who write for it seem to know what they're talking about.

Fred R. Witt
Gates Mills, Ohio

CONQUEST, SURVIVAL AND ENJOYMENT

By ERNEST SWIFT

Conservation Adviser

National Wildlife Federation

THERE is more history etched into the nation's landscape than can be found in books. In spite of bloodshed and conquest, the Spaniards left a legacy of romance and an easy way of life throughout the Southwest that still prevails. The French, using the ancient highways of travel, a myriad of water courses piercing the Continent, were attuned to the drama of their epic and left a charm that still lingers. The less flamboyant English pushed their frontier toward the West with a practical eye for land occupancy and a tenaciousness that excelled all others; but all had the raw courage of conquest.

From various points of the compass, bold adventurers representing the three nations probed a wilderness that had no dimensions. They were hostile to each other, competitive, and plagued by internal jealousies. There was no grand strategy or master plan in the conquest of the North American Continent but, unwittingly, the efforts of all laid the foundation of a mighty nation.

The old Colonies felt the full impact of the eternal forests, serene, primitive and dangerous. They became a challenge to the westward migration and settlement. By turn, they were both enemy and friend.

The first military and trading posts became centers of activity to fight off a wilderness of savage beauty too overwhelming for most to comprehend. Trails leading to the forts eventually became roads of a fashion; a church was added, as were small clearings with their log cabins. A crossroad for merchandising and a spearhead for defense blossomed into a village.

These dots of human activity became the embryo of a

future civilization. The migration from the eastern seaboard was truly representative of the nation's history. It was a definite departure from the old feudal system of Europe as destiny rode the Conestoga wagons. This new breed of people wanted and got absolute title to much of the land.

But at an early date this concept caused some foreboding. A German traveler, Dr. J. D. Schoepf, observed in 1784: "In America there is no sovereign right over forests and game, no forest service. Whoever holds new land, in whatever way, controls it as his exclusive possession, with everything on it, above it, and under it. It will not easily come about therefore that, as a strict statutory matter, farmers and landowners will be taught how to manage their forests so as to leave for their grandchildren a bit of wood over which to hang a kettle. Experience and necessity must here take the place of magisterial provision."

And an American, Benjamin Franklin Adams of Fitchburg, wrote in 1853: "Every wild and unsettled country has its peculiarities both of soil and climate, and these cannot be fully ascertained until tested by the experience of at least several years permanent residence; when these are satisfactorily understood, its settlement takes place in proportion generally to its agricultural resources. This was the rule of the settler . . . try it and see what the land will do."

This, in a nutshell, has been the history of American land development. In the beginning there was so much for so few that planning seemed unnecessary. But, by the time the last frontier was subdued, there were already areas from the New England States to the Gulf of Mexico that were worn out and being abandoned. Except on the most barren deserts, nature in its effort to heal covered the naked wounds of land abuse with coarse grasses and shrubs, and then slowly

(Continued on page 20)

Adapted from November 1, 1962, issue of *Conservation News*, published semi-monthly by the National Wildlife Federation of Washington, D. C.



From its undulating hills and watersheds, prolific in substance and beautiful beyond description, has come much of the sinew of the nation. "Look to the hills of home for knowledge and inspiration."

Game Commission Photo

Trout Fishermen Aren't Crazy

H. LEA LAWRENCE
Johnson City, Tennessee

I KEEP hearing people say that trout fishermen are crazy—wild, loco creatures who are seldom to be trusted and never to be believed.

Well, I resent this sort of talk, especially since I'm a trout fisherman, but if they're to be tagged as crazy, I guess I'll have to ask to be counted in. Denying it wouldn't do me any good, anyway; too many people know better!

But if this is to be an admission of madness, in your opinion, let me quickly add that I enjoy the sport, and it's not just that I'm taking sides with the underdog.

I enjoy it so much, in fact, that I don't have a desire to be something else, like, say, a sedate bass fisherman, or a calm bluegill addict, or even a sensible catfish angler. All of these fellows have some sort of respect among their friends and neighbors. It's the trout fishermen who are supposed to comprise the fringe area between levelheadedness and lunacy.

Lots of things are responsible for the label trout fishermen carry. One of the most prominent is their alleged affinity for miserable weather.

Let me defend this, just for the record. It isn't that they actually *enjoy* going out into weather which would make even a duck hunter cringe—times when the temperature hovers below freezing and the wind is howling like a banshee. The simple truth of the matter is that, one, opening days just seem to coincide with late blizzards, and, two, what trout fisherman in the world would miss opening day? Nothing crazy about that kind of logic, is there?

I'll grant you that fishing conditions aren't always the best in a howling snowstorm, and possibly trout don't prefer frozen worms. But think! That "big one" just *could* be starved from a long winter on short rations, and it just *might* decide to locate a meal on that first day, and it just *possibly* could choose my worm to grab. Now isn't that sound thinking?

Furthermore, trout fishermen are hardy souls, to whom the fancies of weather mean little. The insulated underwear, several layers of wool clothing and four or five handwarmers they are equipped with are only precautions against even colder weather they might encounter. And the flasks of amber liquid they occasionally sip from are but insurance against a sudden immersion in icy water. One never knows when a slippery rock will be underfoot!

Then there's this matter concerning the size of fish trout anglers bring home, and also about the small numbers. I can get very indignant—as can any member of the clan—over this sort of thing. One would get the idea that what a fisherman caught, or how big it was, made a difference if he listened to this kind of talk very long!

The truth is that trout fishermen are mainly concerned with their association with the great outdoors, and that the

weight of the creel is of little consequence. Perhaps you've seen something like watching a grown man jump feet-first into a deep pool in an effort to net an eight-inch trout which he thought was going to get away. And undoubtedly you gained the wrong impression of what was occurring. In reality the man was attempting to prevent an injured and dying fish from being wasted. The zealous look in his eye was caused by his desire to do a good turn for conservation—not a greed for fish as you might have supposed!

Or perhaps you've noted what appeared to be an extraordinary amount of pride attached to some pretty small catches of fish, and have again gotten the wrong impression. You've probably taken this to be boasting over small fry. Not on your life! The fisherman was only showing his appreciation for the beautiful colors and graceful lines of the wily trout, and likely recalling his struggle to outwit these wilderness denizens. Size and numbers, indeed!

The "mysterious quality" of trout fishermen I'll admit to. But remember I've called it just that, and have not said we are eccentric, queer or odd. There is a great difference!

For instance, let me repeat that trout are wily creatures, and thus difficult to catch. When a fisherman discovers a secret weapon which has special appeal, he is going to exhibit a certain closed-mouth characteristic to prevent all and sundry from finding him out. He may even fib a bit in order to safeguard his secret, such as maintaining a creel or trout were taken in Phoenix, Arizona, when they were actually taken closer to home. He might even go so far as to say the fish were rising to a silver doctor when in truth they attacked a submerged garden hackle. This is, after all, only caution. Even if he heads north out of town when he plans to fish south of town, he is only seeking to insure his solitude on the stream.

And then that old saw one hears about trout fishermen being liars—a widely told, but much exaggerated tale. Lord only knows what an impression a person might get if he listened to all that hokum!

What most people don't seem to realize is that trout fishermen are sensitive souls—like artists—and as a result are not to be taken literally on everything they say. Often a hooked fish *does* look larger in the water than it might be when lying stone, cold dead on the butcher's scales. The dynamic action of a leaping fish can cause anyone to be slightly in error. Many trout I have hooked and lost were enormous—even taking into consideration normal over-estimation—yet non-fishermen refused to accept my eyewitness account as accurate. But there are such skeptics everywhere! They think that just because the fish I have landed were considerably smaller than the ones I have lost there is reason to question my veracity!

Being a trout fisherman, and as a result a trusting fellow, I listen to stories of other anglers' tragedies and triumphs without question. I expect them to do the same. The relationship under these conditions is wonderful, allowing the full color and flavor of a fishing experience to be related. Naturally, all the unpleasant portions can be deleted and the pleasant things played to the hilt this way. Distortion, maybe, but not falsehood!

I could list other things in defense of trout fishermen, but really, I don't believe they're needed. Surely what I've said should be fully convincing!

You see, trout fishermen aren't crazy. They're just misunderstood!

IT was 3 A.M. in Blackstone: the date was April 24 and the hunters were extremely excited. The alarm had just clanged noisily, but who needs an alarm clock when he is fixing to match wits and skills with one of Virginia's most challenging trophies—a genuine wild turkey gobbler? Joe, an enthusiastic handsome V.I.P. from Richmond, was getting his first taste of spring turkey hunting after bird hunting most of his life. Moe, his amateur guide who was to do the yelping, had spent a sleepless night worrying about the

The stars were still shining brightly as Joe drove through the mixed pines and oaks on the reservation. It seemed unbelievable that the dawn would soon be breaking. It felt strange to be dressed in hunting clothes here in April—and be legal yet!!! A number of deer that had been feeding on the lush clover along the firebreaks dashed across the woods road as the hunters forded the branch and headed for the high ridge that was to be their final destination.

Then began the long wait: Moe told Joe that if they were

Long Lived the King

By C. H. "KIT" SHAFFER
*Supervising Game Biologist
Lynchburg, Virginia*



forthcoming hunt. Would they select just the right area to hunt? Would it rain or would the wind be blowing too hard to hear the gobblers? How many competing hunters would be in the woods? Would the gobblers cooperate or would they head for the tall timber when Moe began calling? The suspense was rapidly mounting as the hunters hastily prepared breakfast and then rushed to the check station on Camp Pickett.

lucky it would be at least 20 minutes before the first gobbler would sound off from his roost. For the anxious hunters time seemed to stop, much like it does for children on Christmas Eve or for a prospective father frantically smoking cigarettes outside the maternity ward.

At 4:45 they hurriedly clamored out of the car and were greeted by a most memorable concert featuring all of Mother Nature's vocal creatures. The entire world was awakening to a gorgeous spring morning—the whip-poor-wills, doves, insects and hundreds of song birds, all blended into a mighty chorus. Moe noted anxiously, without mentioning it to Joe, that practically every bird of the forests but the one they really wanted to hear could be identified. Perhaps there weren't any gobblers in this particular area!

Over to the east daylight was rapidly breaking. Every tree, shrub, and blade of grass appeared to be especially green that morning. Away in the distance they identified the weird call of a great horned owl. Then it finally happened! On the second ridge beyond the branch the old fellow opened up from his roost with a thrilling, deep-throated "gobble-gobble-gobble." Quickly Moe hooted several times to imitate the great horned owl. Immediately the woods seemed to be alive with gobbling and gobblers. This was completely unbelievable! The enthusiastic hunters rapidly counted five different gobblers within their hearing range. This was a turkey hunter's dream come true, but the thrills were just beginning.

Moe knew that they would have to concentrate on just one of the gobblers, so he left the decision and the gamble up to his companion. After a hasty and excited conference, weighing all the odds, Joe decided on the gobbler on their left, who appeared to be gobbling more frequently and louder than the other four. Carefully they stalked through the field to the edge of the woods heading toward the tom turkey. Standing motionless against a large loblolly pine, Moe made the first low call on his box yelper. Since he wasn't certain that the gobbler had heard the call he yelped again and then they both moved forward cautiously, trying to avoid the twigs, branches and dry leaves.

The old fellow was gobbling from a high ridge in some mature oaks and pines and for a long time didn't appear to pay any attention to Moe's plaintive calling. It was soon apparent that this would be "a knock-down, drag-out battle"; the gobbler was playing hard to get. He would work slowly along the ridge in the direction of the anxious hunters gobbling at nearly every step, then turn and retreat methodically

(Continued on page 17)

Quail Nests and Fall Coveys



A successful hatch is the first step toward a fall covey.

By HAL MYERS, JR.
*District Game Biologist
Amherst, Virginia*

AFTER the exciting explosion of a large covey, when you watch the single birds disperse into cover beyond the far edge of the field, have you ever paused to think of the many obstacles that this little game bird has to battle in our modern age? Let's list a few of the main factors which have an effect upon quail populations, starting from the time that the birds split up, pair off, and begin nesting in early spring. From the day that the first egg is deposited in a nest, made of grasses in some selection of cover, the dangers begin with (1) weather conditions, (2) predation, and (3) man's activities in land management. These are the main factors which affect the numbers of birds the hunting season to follow.

Weather, of course, is the one factor over which we have no control. It may affect the hatchability of the eggs, cause nest desertion, and affect survival of the young birds. It also affects the birds' food supply. There is no question that agricultural crops are poor during drought years, and the same is true of quail food.

Predation and its effects on all game species is often a controversial factor. The habitat used by quail is also inhabited by natural enemies which prey upon the birds during nesting and throughout the life span. Although the great reproductive capacity of quail tends to offset these natural enemies under normal conditions, there are areas created by man, in his land-use practices, where predation has an important effect. These are areas in which the habitat has been disturbed and there is a shortage of both food and

cover. It hardly seems fair to list the dog and cat among the natural enemies of quail, for both can be kept within man's control with the least effort. Both are hunters by instinct and very definitely take their share of nesting and young quail.

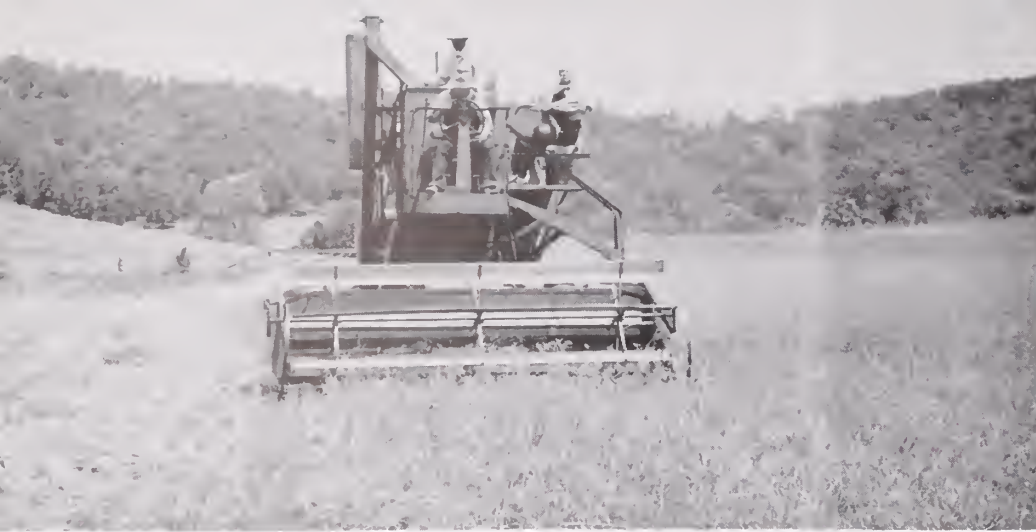
The bobwhite is a farm-land bird and farm activity plays a very important role in limiting populations. Clean farming, modern machinery, and the cattle industry have all had an adverse effect. Despite the fact that in many areas we have an exceptionally good quail population in Virginia, we cannot classify this little game bird as super-natural and cast aside the importance of proper management. The species can readily adapt itself to changing conditions if given some consideration.

Food and cover is generally accepted as a necessity for game in the fall of the year. However, it is very easy to overlook the importance of cover to quail in the nesting and rearing of young in the springtime. This is a vital period,

Commission photo by Kesteloo



A quail nest is a fragile thing in the path of farm machinery or a grazing steer.



Farming operations have to go on in spite of quail nests in the grain fields.

Commission photo by Kesteloo

and a little help in preventing losses at this time will definitely increase the odds in favor of successful reproduction. It also reduces the many coveys of so-called squealers that are found during the first of the hunting season.

Our most important nesting months for quail are May, June, July and August, although there is some nesting as early as April, and some broods are brought off as late as October. During these months farming activity naturally is at a maximum, for most farmers must operate by "making hay while the sun shines." In spring months, fields are plowed and seeded, cattle are turned to pasture, and new areas are cleared by bulldozing, mowing or burning. As summer progresses, crops are cultivated and harvested. In these operations, it would be astonishing to know the true number of quail and other nests that are destroyed in the state. From a survey made by Game Manager S. E. Morris, in Buckingham and Appomattox Counties in the summer of 1962, 21 farmers were interviewed and a total of 70 quail nests were reported destroyed accidentally. On one experimental pheasant release area in Orange county, 12 pheasant nests were destroyed in one alfalfa field.

Quail utilize a wide variety of areas in selecting nesting sites. These include: the edges of fields and clearings, fence rows, ditch banks, wood lots, and just about any other "edge" area used in the normal range. H. L. Stoddard in his book *The Bobwhite Quail* found that a total of 447 nests or 74 percent of all nests studied were found within 50 feet or less of some opening. Since the edge effect is so important in nest location, this is the place where we must start in the management of cover.

It is not possible to prescribe a precise management plan for nesting cover since the quail make their own selections of sites, and few landowners can afford to sacrifice their

first cutting of alfalfa or grasses for this cause. However, nesting losses as a result of regular farm activity will be reduced, and there should be a noted increase in quail, if the following practices are utilized in a program of land management:

1. Maintain or plant strips of grasses 10 to 20 feet wide around cultivated fields. This tends to hold nests away from farming operations. Suitable grasses to be used are: redbud, timothy, orchard grass, blue grass, perennial rye grass, and fescue. Sericea lespedeza strips have been found to be excellent nesting locations.
2. Fence out areas of cover in pasture land.
3. Maintain fence rows, ditch banks, areas of natural vegetation and areas of grass cover in orchards.
4. Avoid use of fire as a clean-up tool in idle areas during nesting season.
5. Clip or mow retired acreages to retard undesirable growth *before* the nesting season begins in the spring, rather than after nesting has begun.

An extensive program of quail management may be expensive when the total number of birds that can be produced on a per acre basis is considered, but the above practices can be carried out through proper planning with a minimum cost. Despite the other obstacles that quail have to battle, the chances are increased for a good fall harvest when that brood of young leave the nest unmolested.

No doubt, a six-ounce quail is mighty small and vulnerable in the path of the rumbling of a 900-1300 tractor tire, the humming mower-cutter bar, the shining blades of a brush hog, a pounding dozer blade, a rushing grass fire, or the hoofs of a 1000 pound steer. Usually the injured or broken wing act displayed by an incubating bird is in vain when these dangers approach.

Commission photo by Kesteloo



Undisturbed cover entices birds to nest out of harm's way, especially on second attempts after first nests are destroyed.

FROM STREAM

WARM
WATER

BASS &
BLUE GILL

FRESH
COLD WATER

TROUT

DAM

STAGNANT
WATER



Two Story FISH LAKE...

By RICHARD L. APPLIGATE

*District Fish Biologist
Harrisonburg, Virginia*

FRENZIED activity was the opening day scene at Lake Shenandoah in Rockingham County last June 2. Five hundred and fifty-five fishermen were on hand for the reopening of the lake, which had been closed for three years. At day's end, the anglers had accounted for 478 largemouth bass, 3,265 bluegill and 222 rainbow trout weighing over 3,000 pounds.

Lake Shenandoah is a 36.5-acre state constructed and owned lake. As it is located at an elevation of about 1,000 feet and fed by one large and five small springs, one might believe it to be well suited as a trout lake, but this has proved untrue. In 1958, nearly 9,000 rainbow and brook trout were stocked. Water samples taken during this same year indicated there to be a very thin layer of water cold enough, and with enough oxygen, to support trout during the latter part of July and the first part of August. Although angling accounted for many of the stocked trout prior to the critical conditions, when the lake was drained in the fall of 1958, thousands of newly spawned pumpkinseed sunfish and one trout were the only fish present.

When the lake had again refilled in the fall of 1960, proper numbers of largemouth bass and bluegill were stocked. These fish grew rapidly in the warm water habitat provided, and after the bass had spawned in the spring of 1962, the lake was opened for fishing.

In the past, when state owned lakes have been opened, the majority of the bass often have been removed during the first few days of heavy fishing pressure. This not only results in poor fishing during the remainder of the season, but in poor fishing in future years. The removal of the majority of the predator species leaves the sunfish free to

reproduce in excess—the end result being a lake overpopulated with stunted pan fish.

As an attempt to delay this situation, a minimum length limit of 12 inches was placed on bass at Lake Shenandoah, and a creel census taken to evaluate the effect the size limit might have. Fishing pressure was heavy at the outset with a total of 1,876 fishermen trips recorded the first nine days. During this short period, 644 largemouth bass averaging one pound and 4,781 bluegill averaging nearly one-half a pound in weight were taken. After this initial period, bluegill fishing remained poor throughout the season. Only 1,183 bluegill averaging less than four ounces were taken. On the other hand, bass fishing was generally good throughout the season. The number taken steadily increased from 98 in July to 175 in September, even though fishing pressure decreased from 563 trips in July to 504 trips in September. The creel data tend to indicate that the minimum size limit on bass was a desirable measure as it extended good fishing throughout the season rather than allowing the majority of bass to be removed in the initial opening period. Whether such a length limit on bass is truly desirable, and whether the measure will achieve the long range affect desired at Lake Shenandoah, remain to be seen.

To increase fish production to its maximum, a "two-story" management plan was put into effect six months before the lake was to open. The terminology, "two-story" management, implies nothing more than the stocking of trout in certain impoundments already containing existing populations of warm water fish. Such impoundments have layers of cold, oxygenated water which the trout may inhabit during the summer. It was felt that Lake Shenandoah would have such a layer in 1961 even though water suitable for trout had

(Continued on page 17)



A camouflaged blind, set up ahead of time, helps the camera hunter get "shots" at undisturbed wildlife.

TIPS ON CAMERA STALKING

By HENRY H. GRAHAM
Twin Falls, Idaho

Commission Photos by Kesteloo

THOUSANDS of people like to take pictures of animals and birds in both black and white and color. It is a popular diversion at all times of the year. And such pictures make welcome additions to any den or album. Movies, as well as stills, may be shot.

Wild creatures offer a ringing challenge to the photographer. Most furred and feathered creatures are exceedingly shy. It requires great patience, stealth and cunning to approach near enough for an effective camera shot in many cases. Telephoto lenses help, of course, by providing a larger film image than does the regular lens, but it is still an achievement to "bag" wildlife with a camera. There are many disappointments in the chase.

The serious-minded wildlife photographer is smart to

build a "blind" long before he expects to do any actual shutter tripping so that the creatures he hopes to photograph can get accustomed to seeing it and hence will not shy away from it. This blind should be constructed as much as possible out of materials natural to the locality in which the camera hunting is to be done. Then the finished product will harmonize reasonably well with the surroundings. It should be made as inconspicuous as possible and provide adequate concealment for the lensman.

Near animal trails is the best spot to build a blind from which one hopes to photograph four-footed creatures. A particularly choice site is where such a trail ends at a lake or stream. Deer and other four-footed animals must drink regularly and some of the best pictures are taken when they are standing in the water, the photographer using natural illumination or flash. Most forms of wildlife drink in the evening or early morning. Some species make twice-daily journeys to quench their thirst.

It goes without saying that whether the waiting photographer is in a prepared blind or just hiding in a likely place he must be very quiet. Talking is taboo. Animals have sharp ears and the slightest suspicious sound will send them scurrying for cover.

The wildlife photographer never knows what animals and birds he will see from his hiding place. Various animals, besides the ones that make them, use the trails. They all offer good fodder for the camera lens.

Waiting for something to come along can be a bit

TROPHIES THAT NEVER DIE: *Some results of successful Camera Stalking*





Sometimes the camera must be set up in the open while the photographer remains well hidden in the brush.



An old shack in the woods makes a good blind. Windows must be covered so that movement within cannot be detected from outside.

tedious at times, yet the photographer dares not relax his vigilance or he may miss out on a choice opportunity. He must be constantly alert. Even large creatures often move quite silently along leaf-strewn paths, especially if the latter are wet. Seldom do animals of the forest announce their movements with any fanfare.

Beavers serve as excellent subjects for the cameraman's lens and are not especially hard to catch on film. One should conceal himself close to a dam, lodge or bank den and await developments. Sooner or later he is almost certain to be rewarded. These animals sometimes build or repair their dams at night. This is when synchronized flash comes in handy. Beavers are easiest to photograph at night if there is moonlight for this reveals their presence and location. A flash bulb does the rest. On a dark night it is difficult to determine exactly where they are working.

An acquaintance of mine likes nothing better than to stalk wildlife. When tramping through the forest his camera is always set and ready, the shutter cocked, the lens aperture about right for the prevailing light. He can shoot quickly and has some fine pictures to show for his alertness.

Many shutter trippers specialize in waterfowl photos. They hide in the cattails fringing the shores of reedy lakes or in some other advantageous spot and are prepared for anything that comes along. One man's best shot shows a flock of majestic Canadian honkers directly overhead at a low altitude. By using a shutter speed of 1/500th of a second he "stopped" every wing cold. The birds are shown flying in a graceful formation. It is a photo packed with drama and beauty.

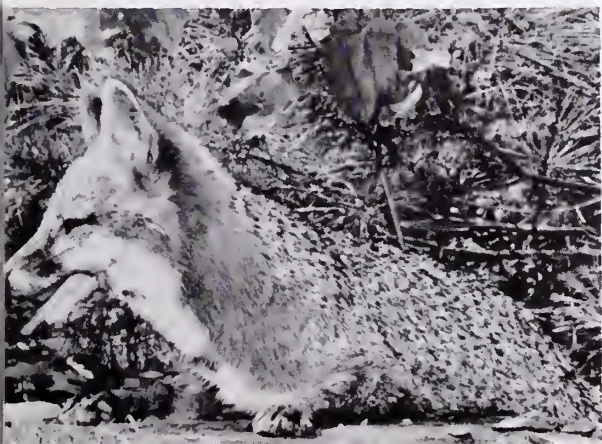
When necessary this man thinks nothing of crawling over

mud on his stomach for long distances in order to get into camera range. He showed me pictures of plovers, swans, ducks, jacksnipe and cranes. While some of them were taken through a telephoto lens, for the majority he used a regular lens, getting into the proper position in some cases by dint of much hard work.

Fish as well as animals and birds may be photographed. What is more eye-catching than a picture of a fish leaping an obstacle on the way upstream to spawn? In order to obtain such masterpieces of piscatorial agility the lensman need only station himself in the right position. He must have a reasonably fast shutter, however, or the jumping fish will register only as a blur on the negative.

Trout and other fish can be photographed at times in a still, clear pool, every finny specimen standing out quite sharply. For such a picture one must, of course, look almost directly down into the pool, perhaps from an overhanging bluff or tree. And the sun must be precisely overhead so that the pool is brilliantly lighted from top to bottom. A slanting sun does not illuminate the water with sufficient brilliance to insure good results. If one can get close enough he might experiment with flash.

Wildlife photography is not only an interesting hobby that provides personal satisfaction, but the better pictures may often be sold for good prices. Thus, it can be a profitable hobby, too. If you have already gone in for this sort of thing you know what fun it is. If you haven't, you are missing a lot. Such pictures never grow old. Each one brings back fond memories of a pleasant experience afield. Just getting out into the open air for a few hours is reward enough in itself anyway.





Worn with Pride

Become A GAME WARDEN TRAINEE In Virginia

THE DUTIES OF GAME WARDENS: Enforce the game, inland fish, and boat laws and promote fish and wildlife conservation in an assigned area of the State. Giving information, building good public relations, and securing cooperation are important aspects of the job as are the detection and apprehension of law violators. After training, wardens carry on much of their work independent of supervision so good judgment, initiative, and a sense of responsibility must be exercised. General supervision is received from a Game Warden Supervisor.

APPOINTMENT AND PROMOTION: Several young men will be appointed as trainees by the Commission of Game and Inland Fisheries within the next few months. These appointments are the result of a competitive examination.

By JOHN H. McLAUGHLIN
Chief, Law Enforcement Division

BECOME a Game Warden Trainee in Virginia," said the announcement from the State Division of Personnel Recruitment Office, and 762 eager young men stepped forward to answer the call.

Anticipating about 18 vacancies in its warden force during 1962 and 1963, the Commission of Game and Inland Fisheries instituted a recruitment and selection program for wardens during the summer of 1962. Examination announcements and special information sheets for applicants were prepared, and distributed through 36 local offices of the Virginia Employment Commission as well as through the offices of the Game Commission and the State Division of Personnel. Interested young Virginians by the hundreds sent in their applications.

Selections were made on the basis of merit and fitness, as measured by state-wide competitive examinations. Applicants who appeared to meet initial minimum qualifications were sent forms on which to submit further information when they appeared for tests at the examining center nearest their homes. Verified criminal histories, or a verified statement that none existed, proof of high school graduation or equivalent, and a report of physical examination were among the documents required.

Game wardens' work involves tasks requiring a wide variety of skills and abilities. They operate power boats and radio-equipped cars, but they also make rugged patrols on foot in mountains, swamps and all the varied terrain between. In enforcing game, inland fish and boat safety laws they not only apprehend and arrest violators; they also conduct investigations the results of which have to stand up as admissible evidence in court; and they must prepare and present their cases for trial. But this is not all. They are called upon for such educational and public relations work as lecturing on Game Commission activities and other conservation topics. They conduct hunting and boating safety classes. And they work frequently with game and fish biologists on a variety of wildlife management and research projects.

Candidates are not expected to possess all the required skills and knowledge. What they must have is the capability and will to acquire these, in the course of a brief period of indoctrination and training.

As with any other organization, certain basic personnel management functions contribute much to the efficiency of the game warden force. Two such functions are the selection of men with aptitude for the job, and the provision of proper

basic training either prior to or at the time of initial employment. With these steps accomplished, adequate supervision and further in-service training of personnel at regular intervals can keep the organization capable of performing its mission and of adapting itself to changing conditions and requirements.

The competitive examinations given warden trainee candidates consist of a written test weighted 60% and an oral test weighted 40%, supplemented by physical agility tests and character investigations, on all of which qualifying standards have to be met. Candidates failing to qualify at any stage are so advised and are dropped from the program. Those finally recommended by the examining board are given temporary appointments, and paid game warden trainee salaries, while they attend their first formal in-service training school. Upon satisfactory completion of this school they are eligible for probationary appointments, which they hold for a year prior to attaining permanent warden status.

From the original 762 applicants in 1962, 21 or just three more than the anticipated number of vacancies, were selected to attend a two-week training school conducted on the campus of the University of Richmond. Here students studied law enforcement, investigation and court procedure, pursuit driving, conservation and game management, public relations, and other subjects germane to the special fields of knowledge and skills required of game wardens. With the exception of one who withdrew from school because of unexpected family complications, all the regular students and all but one of the three supernumeraries completed the school work and received probationary trainee appointments. Each trainee was assigned to an area of the state which, so far as practicable, did not include his former place of residence, and each was assigned to work with an experienced game warden or supervisor who would counsel and instruct him in his work until he should be promoted to full game warden status to fill a vacancy in the regular force.

Such careful selection and training pays off, as a good investment in wildlife conservation and law enforcement. All the new appointees have performed in a highly satisfactory manner from the very first. Only one has resigned. Examination and screening provided a cadre of new wardens fit and motivated for the job. Adequate formal schooling and on-the-job training contributed to the confidence of the new men when they finally were ready to pin on their badges and take up their duties in the field.

Today these young men, like the more experienced members of their brotherhood, wear the insignia of their office proudly. They have every right to. They earned it.



CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

WATERFOWL MAY BE PULLING OUT OF SLUMP. The results of the recent mid-winter waterfowl survey January 7 and 8 indicate that the nation's waterfowl may be gaining back some of the ground lost in recent years. Virginia figures show all ducks up 6% over a year ago. Puddle ducks showed a 22% gain while divers were down nearly 10%. The number of wintering Canada Geese in Virginia was nearly double that of last year, but observers felt that this was more likely a matter of interstate movement than a great increase. Reports from some states in the Mississippi and Central flyways indicate larger numbers of wintering waterfowl this year.

Reports from the breeding grounds indicated better water conditions in prospect for the coming breeding season. If waterfowl populations are up and breeding conditions improved, it could mean that the ducks will be making a comeback.

MYSTERIOUS DEER DISEASE IDENTIFIED. A foot ailment found in a number of eastern Virginia deer killed during the past hunting season has been diagnosed by the Southeastern Cooperative Deer Disease Laboratory as nothing more than a disorder typical of animals grazing on fescue grass. Game biologists in this area were somewhat shaken by the high number of animals taken with sore, misshapen and broken hoofs. Dr. Frank Hayes, head of the Deer Disease Laboratory, stated that a toxin is produced in fescue when a long dry period is followed by freezing weather. When eaten by deer, the toxin causes constriction of the blood vessels in the foot and the hoof dies and comes off. It is usually replaced by new growth with no permanent ill effects to the animal.

As would be expected, the foot trouble is not contagious to other animals or humans and the edibility of the meat is in no way affected.

NEW TROUT TECHNIQUE SHOWS PROMISE. A new technique of stocking trout in smaller fishing lakes which have established bass and bluegill populations may be a way of stretching the trout stocking dollar. In the winter of 1961 the Commission of Game and Inland Fisheries stocked 800 fingerling trout in Lake Shenandoah and during the past summer fishermen recovered 47% of these which averaged one-half pound apiece. This was in addition to a 100-pound-to-the-acre catch of other fish during the summer months.

Encouraged by the results in Lake Shenandoah, the Commission of Game and Inland Fisheries has made similar experimental stockings of trout in Scott-Wise, Bedford County, Douthat, Hungry Mother and Carvin's Cove Lakes and Gatewood Reservoir. It is hoped that at least some of these will be successful.

ACCESS AREAS TOTAL 34; MORE ON THE WAY. Since the beginning of its access area development program in 1959, the Commission of Game and Inland Fisheries has developed 34 of these areas to serve the State's fishermen, hunters and boaters. Twelve of these are on salt water and the remaining 22 are on fresh water. Eleven of the salt water sites and nine of those on fresh water have reinforced concrete ramps. Some of the gravel ramps may be hard-surfaced at a later date when the use of these areas warrants the added cost.

The Commission plans to continue its access area development envisioning eventually one access approximately every 10 miles on major river shore lines. Immediate plans contemplate the development of six sites in the next 6 months.



Enforcement of Virginia's hun

WARDENS AT WORK

Commission Photos by Kesteloo

Officers go to school. Professional growth means periodic in-service training as new ideas are developed and new responsibilities assigned.



WHAT does it mean to be a game warden? Executive director Chester F. Phelps, addressing the game warden trainee school last year, set these standards:

"What does our Commission expect of us?

"They expect us to be gentlemen.

"They expect us to be conscientious, diligent and honest in enforcing game and fish laws.

"They expect us to grow in our jobs. Five years hence we will be required to perform tasks that today are impossible for us.

"They expect us to prevent some of tomorrow's law violations by spending time with today's children.

"They expect us to serve people, even those

Wardens are expected to grow with their jobs as new equipment and new techniques are introduced. Note illegal d



Enforcing fishing and boating laws is the game warden's main job.

whose names may be on a petition favoring our dismissal.

"They expect us to be kind and considerate but not weak and gullible.

"They expect us to work alone while others are working together or playing together.

"They expect us to honor our organization and speak well of it, and to help make it worthy of such respect.

"They expect us to serve many pleasant years in a satisfying profession where our rewards are largely in the knowledge that we have helped make our fellow men healthier and happier."

The accompanying pictures show how officers, in their daily tasks, put some of those charges into practice.



Sportsmen who know them best find wardens friendly and helpful.



An investment in the future. Time spent with the youth of today heads off some of tomorrow's problems. Wardens are interested in young people, and are active in teaching them how to use and protect wildlife resources.



Assisting game and fish biologists in research, habitat improvement and restocking is all in the day's work.



Spotted by warden flying patrol over marshland.

Weston Refuge

By W. H. TAYLOR
District Game Biologist
Culpeper, Virginia

WESTON Farms Estate, located about six miles SE of Warrenton and one mile east of Casanova in Fauquier County, Virginia, was willed to the Commission of Game and Inland Fisheries by Miss Charlotte Saint George Nourse on her death July 29, 1959, to be "used as a game preserve." The Commission accepted the bequest and established the area as "Weston Refuge."

The main dwelling and outbuildings plus ten acres of surrounding land were willed to the Warrenton Antiquarian Society by Miss Nourse. This portion of the property was subsequently leased to the "Casanova Hunt," a local fox hunting club of which Miss Nourse was a member.

Weston Farms is one of the oldest homes in the area dating back to 1751. It was sold to Charles J. Nourse in 1858 by Berkley Ward. C. J. Nourse left it to his heirs on his death in 1904. The farm was divided into two tracts in 1928. The eastern tract retained the name of "Weston Farms" until it was acquired by the Commission and became Weston Refuge.

The refuge consists of 271 acres of which approximately 90 are in cultivation, 75 acres in forest and the remaining 106 acres in undeveloped pastures and fallow land. Normal farming operations have been continued, featuring the corn, small grain and hay rotation. Miss Nourse's former tenant rents the farm land on a share crop basis.

The woodland consists of mature oaks and hickories, predominantly white oak. This woodland was cruised and 75,000 board feet of oak timber was marked by the Virginia Forest

Service. Part of this oak timber was sold in 1961. On approximately 40 acres of undeveloped pasture, eight thousand pine seedlings were planted in 1961.

The area is a good natural habitat for farm game. Species present include quail, rabbits, squirrels, doves, foxes, raccoon and on occasions deer and turkeys. At present the refuge is open to the public for use as a nature study area and is used by nature study groups, school groups, bird watchers, etc.

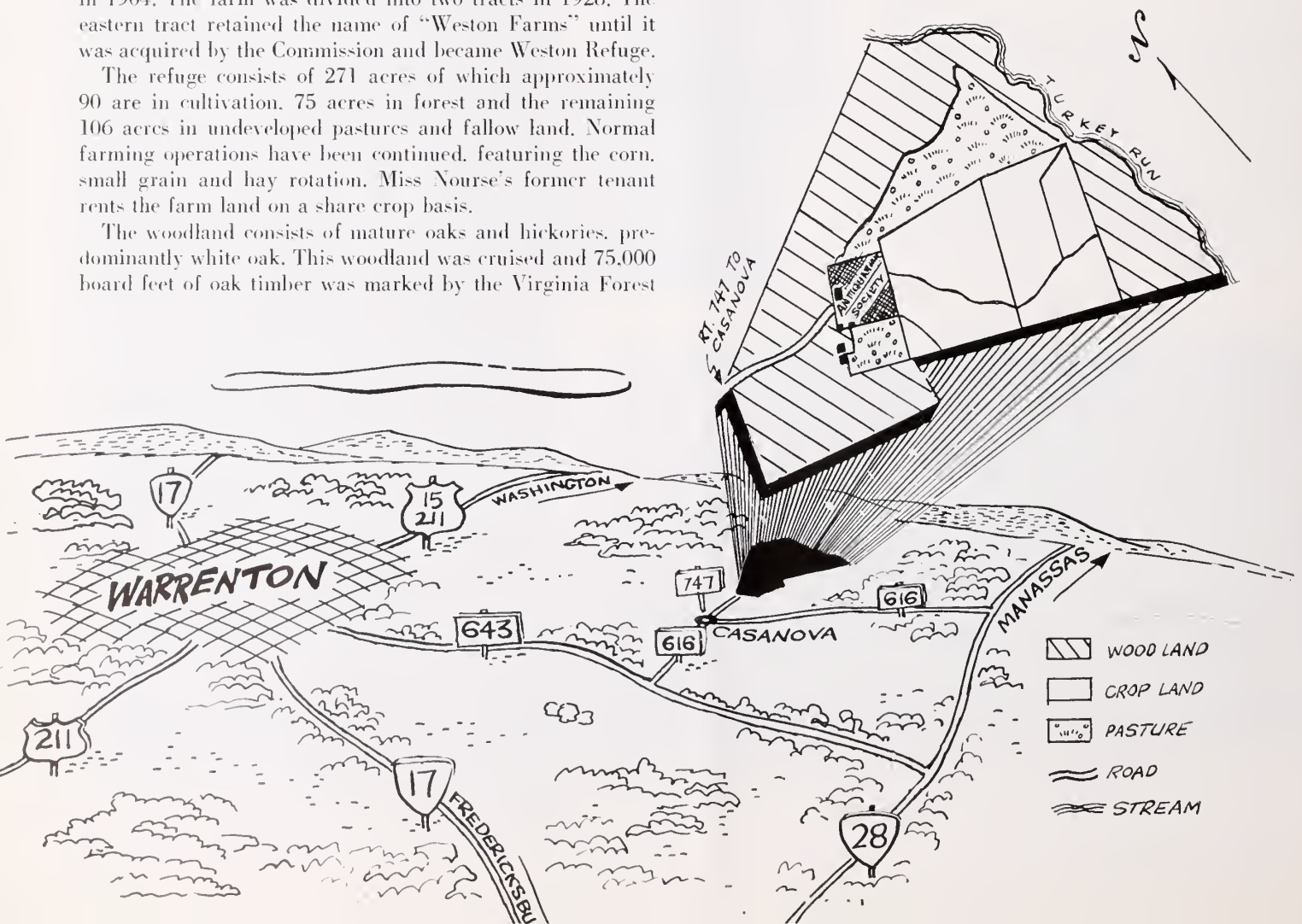
Management plans for "Weston Refuge" include development of demonstration areas for farm game improvement; development of limited field trial areas for bird dogs, beagles or fox hounds; experimental areas for testing wildlife management techniques; planting of exotic wildlife foods; and possible release site for exotic species of game birds or animals.

The demonstration area development is in the planning stage and work will be started on habitat improvement for farm game next spring. One field of six acres will be planted to brown top millet to test the feasibility of developing public dove hunting areas. Food patches, cover plantings, and other habitat improvements are planned for quail and rabbits.

The "Casanova Hunt" requested and have been granted permission to run fox hounds on and across the refuge.

In cooperation with the Fauquier Beagle Club a beagle field trial area of approximately 80 acres will be fenced and developed to improve the rabbit carrying capacity. This area will be open to other beagle clubs and beagle owners for field trials. In the future limited use for bird dog field trials may be made.

Although Weston Refuge is small in size, it soon will provide many people of Northern Virginia a wide variety of wholesome, high quality outdoor recreational opportunities.



Long Lived The King

(Continued from page 6)

in the opposite direction. This was a vain rascal—he fully expected the hens to seek him out. Unfortunately the hunters could not move up any closer without exposing themselves. Moe tried to imagine what the old boy looked like at this time strutting and gobbling out of sight. He must be all puffed up, with his powerful wings dragging the ground and his large tail spread out majestically into a huge fan. If only he would come in closer!!!

The suspense was almost unbearable. Moe's heart was beating so furiously that he had difficulty operating his caller. He knew from many past experiences with these wise old birds that one misnote now would be fatal to their chances of even seeing the big bird. In the meantime, the day had begun to get hot, the hunting coats were too heavy, and the pesky flies, gnats and mosquitoes kept getting into eyes and ears. It was tough to remain motionless in times like these, but it was most essential at this point of that game!

Finally after fully two hours of frantic and suspenseful yelping, clucking, and gobbling back and forth, the gobbler made his move! They could determine from the direction of the gobbling that he was gradually moving down the ridge toward them. Now every cluck from Moe's cedar box brought forth an earth-shaking "gobble-gobble-gobble." We have it made, Moe told himself; he's coming in after all!

The hunters had finally located near a small stream and were standing motionless against a huge poplar tree. Suddenly it dawned on them that their buddy, the gobbler, had shut up and was no longer gobbling. There was utter confusion, heart-sinking doubt and indescribable excitement—all emotions mixed into one great big heartbreak. Whispering sadly to one another, each hunter gallantly tried to take the blame. Joe claimed he must have moved while Moe insisted that he had "goofed up" on his yelping. Perhaps another hunter had messed them up, or, just as devastating, a real hen may have entered the picture. Was the gobbler going, coming or merely circling? For fully 15 minutes the anxious hunters asked themselves these questions, at the same time fervently hoping that tom turkey had not deserted them completely.

All of a sudden, Joe ever so cautiously started raising his automatic and then Moe finally spotted the gobbler. He had just crossed the branch and was headed in their direction. The King of Virginia's game birds was walking majestically, rapidly, yet still cautiously. His head, which was the first thing that the hunters had noticed, was an unusual bluish white. Unconsciously Moe weighed him—a 20 pounder if he weighed an ounce! His beard was long and heavy—what a trophy he would be for Joe! It seemed that almost every color of the rainbow reflected from the feathers of this magnificent gobbler. The suspense was terrific as Moe waited for his companion to pull the trigger. Would Joe aim for his head? Would he cripple him or perhaps even miss and allow the gobbler another day or year of grace?

Moe's feelings were strangely mixed; he desperately wanted Joe to get this huge bird. At the same time he felt compassion for the beautiful tom and secretly hoped he might possibly escape!

The gobbler had finally come within range and was headed toward their blind. Now what do you think happened? "Long lived the king!"

Two-Story Fish Lake

(Continued from page 9)

not been present in the lake in July and August of 1958.

Two things, it was felt, should have produced the changed water conditions. First, most of the decaying organic matter on the lake bottom, which had consumed quantities of oxygen from the cool bottom layer of water in earlier years, now was gone. And secondly, a bottom drain had been installed in the dam, making it possible to draw off stagnant, unoxygenated water *from the bottom* instead of allowing the fresher water *from the top* of the lake to spill over the dam. This, in turn, would allow cold, fresh spring water coming into the lake to move to the bottom where a layer of cold water suitable for trout could be maintained throughout the summer under the warm bass and bluegill water nearer the surface.

If "two-story" management would work at Lake Shenandoah, it would result in greater utilization of the available water for fish production. Trout would never reproduce successfully in the lake, but a relatively small number (nothing like the 9,000 released in 1958) stocked in the fall could grow rapidly during the winter with little competition from the near-dormant warm water species. So long as there were not too many of them, they could find suitable water in which to live through the summer fishing season by going down deep while the active warm water fish took over in the upper layers.

Eight hundred rainbow trout, averaging 7.5 inches in length, were stocked in the late fall of 1960. These trout were free to move about the lake, feeding and growing during the winter months when warm water species were dormant. In the spring, they were offered "vacant room and board" in the zones of cold, oxygenated water present. When the lake was opened in June, the trout caught had more than doubled in weight, and had gained an average of 3.7 inches in length. Fishermen took 381 or 47.6 percent of the trout. Besides increasing the over-all production of the lake, the trout had added "spice" to the season's fishing. In the spring, trout had been active throughout the lake, and could be caught on the surface or at almost any depth. As the bass and bluegill became active, anglers who wanted trout had to modify their techniques and fish deep.

A total of 4,130 fishermen trips consisting of 12,542 hours were recorded for the season. Fishermen had accounted for 7,169 fish weighing 3,754.9 pounds. This amounted to 113 trips per acre and 102.9 pounds of fish harvested per acre.

The collecting of creel data will continue at Lake Shenandoah. It will be determined how well the size limit on largemouth bass helps control the forage fish species and raise the yield for the angler. Also, the stocking of trout will be evaluated according to rate of growth and percent return to the creel. This year the trout stocking has been raised from 800 to 1000. Such investigations are expected to establish the best management measures for producing the best fishing possible at Lake Shenandoah.

The continuing investigations at Lake Shenandoah require accurate data, which means that Commission personnel must be on duty full time at the lake whenever fishing is going on. The lake will be open for fishing in 1963 during the period in which, experience has shown, there will be enough anglers on the lake to justify the expense of such full time data collecting—namely, from the opening of trout season until November 30.

Game Bird Habitat

By DOROTHY E. ALLEN
Education Officer

OUR objectives:

1. To develop an understanding of the importance of the relationship between game birds and their environment.

2. To encourage students to be observant and to make discoveries about game birds living near them.

All game birds need a home. This home is called environment or habitat.

Wildlife populations depend upon a variety of natural conditions for their existence and development. Food, cover, water, and space are usually the most important.

COVER—Cover can be any vegetation that allows escape from enemies, protection from the elements, and a refuge for roosting, bedding and nesting. Different species have different cover requirements, and each species needs several different kinds of cover. The bobwhite can use annual grasses or weeds for summer nesting cover, but for winter protection needs durable vegetation that resists snows and offers concealment when summer foliage is gone. Waterfowl nest and raise their young and moult where surrounding water or dense vegetation offers protection from predators, but as adults or in migration a wide stretch of open water is often their best protection. The lack of any of these needs results in decrease of populations which cannot be made up until the habitat is improved.

FOOD—Without ample food, game birds cannot survive

even in the best of cover. Game bird foods must meet the needs of the species. Most birds have to find food each day, every day in the year. Sufficient food must be available the year around. If the food supply is short, only a number of the individuals that get enough to eat can live.

Nutritional value or the nourishing quality of food is very important for health and ability to produce abundant, vigorous young. For game birds this must be available in natural foods, for we cannot enrich their food as we do our own. Thus the soils where wildlife foods grow must be fertile enough to supply the minerals, vitamins and other food elements needed by the species that feeds on it. The food must also be located where the birds are protected while they are feeding. The bobwhite quail needs overhead protection from winged enemies and surrounding cover from four-footed predators; food should be available in or near good cover.

WATER—All game birds must have water in some form. The kind and amount of water varies with the species. For waterfowl, water supplies food as well as protection from enemies that cannot fly or swim. The quality of the water is all important—for in the chain of life it produces aquatic plants and animals on which waterfowl feed. Pollution is unfriendly to aquatic life.

SPACE—Living space for game birds to carry on their activities is essential. Overcrowding is bad, for it increases chances for disease and predation. Even though it is possible to build up food and cover supply to take care of 10 quail per acre, it is difficult to average more than one quail per acre. According to the nature of a species, there seems to be a need to move around a certain amount. Partly this is a matter of getting the amount and variety of food and cover it needs; partly it is a way of avoiding predators; with some species, it is tied up with migration and, with others, a means of mixing up families so that inbreeding isn't so common. Perhaps another good reason is that wild birds just don't like to be crowded and do like to move around.

CARRYING CAPACITY—Food, cover, water and living space are essentials of game bird habitat and together add up to what is called "carrying capacity." This is the number of animals a certain area can support, or carry, at a given time. Carrying capacity determines the number of animals that are produced and survive for our harvest (hunting); how many will be taken by predators; and how many will survive the winter and be left to reproduce. Carrying capacity is determined by what we do to the land and the water. This is management and will be taken up in Study 4.

Suggested Activities

1. Make a "variety-bird." Draw the outline of a bird in flight on heavy cardboard. (An old carton box works fine.) Cut it out, hang it on a wall, clothe it with feathers students find and bring in, being careful to put tail feathers in tail (stiff feathers, shaft down center, web the same on both sides of it), wing feathers in wing (stiff feathers, shaft far to one side), body feathers on body (soft feathers, smooth feathers, smooth webbing toward tips, downy towards inside). Chicken feathers are interesting and easy to get if game bird feathers cannot be found.

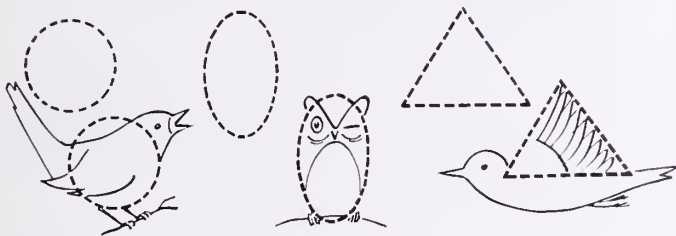
Attention: Teacher

The best way to teach about our game birds' habitats is to begin with the basic concepts. Soil and water are essential to plant and animal life. Animals (including birds) cannot live without plants. The natural environment of all living things is always changing. Once these concepts are understood students should be introduced to the wonders of the outdoors. By exploring their backyards, schoolyards, neighborhoods and the countryside near their homes, they will experience the joys of making discoveries about animals and plants that live there. Reading life histories and looking at pictures are interesting and stimulating activities but are no substitute for personal observation and adventure. The thrill that comes from the first discovery of a bird's footprint, observing flushed covey of quail, seeing the "tipping up" of ducks on a pond, or paying a visit (in May) at dusk to a pasture where a woodcock sings its sky song cannot be duplicated in a book. Schools differ greatly in location and in the opportunities they have for field trips. Encouraging students to see things by themselves on weekends or after school by helping them know what to look for, and how and where to look, works out very well. This can usually be accomplished by short trips around the schoolground or to nearby parks. If planned well in advance, such trips can be extremely worthwhile experiences if everyone has responsibilities and knows ahead of time what is expected of him on a trip. On a field trip a student can make his own discoveries and glean facts for himself from his own powers of observation. The teacher should be a guide rather than an encyclopedia. Of course, she must know of good references and where to find the information. The success of the field trips rests largely on the enthusiasm and initiative of the leader and her ability to use the environment as a textbook.

2. Sketching birds is fun; everyone can learn the trick.

A. *Orals and circles.* Draw a circle. Draw an oval. Draw a triangle. Let your arm swing as you draw. Practice this until it seems easy; then you will be ready to draw birds.

B. *Bird outlines.* Place a picture of a bird in front of you. Draw an oval about the size of the bird's body. Draw a circle for its head. Draw a long oval for its wing. Compare your ovals and circles with the picture; change them slightly to give better shape to the bird. Add the tail, bill, eye, feet and perch. Try drawing several birds, using the ovals and circles first to help you get size and general shape. These are outlines. Now you will see how much use of an outline helps to identify a bird. Find a live bird, feeding, drinking, sleeping. Draw it the same way, using the ovals and circles. Find a picture of a bird flying. Draw an oval for its body, a circle for its head and triangles for its wings and tail. Add eye, bill and feet. Find some clouds in the sky. Draw them behind your flying birds. At the bottom of your flying bird picture suggest the type of habitat it is flying over—water, pasture, swamp, edge of a forest, etc. (see illustration).



3. *Bird nests.* Most birds build a new nest in the spring. It is interesting to collect the old ones in fall or winter. Be sure to remember where each one was found because next spring the old birds will be back and will build another nest in very nearly the same place. Knowing where a nest was found will tell you the type of habitat the bird prefers for nesting.

A. Make an exhibit of the nest. Write a label telling the name of the bird, where it was found, who found it, the type of habitat. Put a picture of the bird on the label.

B. Take a nest apart. Sort out the different kinds of material it is made of (hark, roots, plants, feathers, mud, sticks, etc.) and make a pile of each. Count the number of pieces in each pile. (The birds probably made a special trip to carry in each piece.) Wrap each different pile of material you found in cellophane and fasten the packages to a cardboard and label them. Sometimes very strange things are found in nests. See what you can find.

C. Plant a bird's nest. Most bird nests have seeds in them. The wind blows some in and the birds carry them in. Find a flower pot big enough so that the nest will just fit inside the top. Fill the bottom of the pot with good soil but leave enough space so that the nest will fit in on top. Push it firmly against the soil. Water it well and place it in a warm, light place. This will be a "surprise garden," because no one knows exactly what will grow from it.

4. Make a "billy-bird." By observing just one thing—the bill—of a bird, you can tell what some of its habits are and often something about its habitat. Watch birds eating to see how they use their bills. Different birds have different bills and eat different kinds of food.

Draw a large oval on cardboard. Make it about 10 inches long and five inches wide. This is the billy-bird's body. Draw a three inch circle on top and at one end and let it overlap on the oval for about one inch. This is the head. Punch a hole in the head about one inch back from the front and put a paper fastener through the hole. Cut out the bird and thumbtack the body to a block of wood to hold it upright. Draw bird bills on cardboard. Try to make each bill about natural size. Draw a two inch circle at the base of each bill, cut out and punch a hole at the center of each circle. Make bills for a mallard duck, merganser, shoveler, quail, woodcock, etc. Thread all the bills on the paper fastener and bend the two prongs back to hold them snugly. Let them all hang straight down behind the bird's body. Turn one bill at a time into position (horizontally) and discuss how the bill is used and what it tells you about where to find the bird and its habitat. For example, the woodcock's bill is long and slender, good for probing in the mud for worms, found along the banks of streams.

5. Plants form the basis of a bird study for all birds are dependent either directly or indirectly upon plant life. One could not have an adequate understanding of game birds without understanding the bird's requirements and the plants that affect their welfare.

A. *Plant collection.* Students may choose to collect plants or leaves for identification. It is important to know the common names of plants but too often identification becomes the sole objective. Knowing the condition under which plants live and their relationship to birds is a better objective if the student is to gain an understanding of wildlife. Study a marshland, woodlot, bog, flood plain, pasture to determine the species of plants found in different habitats.

B. *Seed collections.* Collecting seeds that are used by game birds is a fascinating project that most students like. This project involves, among other things, seed dispersal, the time at which seeds mature, and the food value of seeds. A study such as this is sure to show the dependence of many game birds upon plants.

A seed collection involves some equipment such as vials or small bottles which can be obtained at almost any drug store, and small labels on which the names of the seeds may be written. Small plastic bags can also be used. List the names of game birds that eat each seed.

6. *Game bird survey.* List the game birds which are found in your locality.

A. What tracks have been seen by students?

B. Which students have gone hunting? What birds have they hunted?

C. What birds have been seen while hunting? At other times of the year?

D. What nests have students seen?

E. What bird calls have they heard?

Make a survey of your local community to determine the abundance (or scarcity) of game bird food and cover. Let students map their findings to give the over-all picture of habitats in the areas studied. Kinds of cover can be shown in different colors and density and can be represented by any symbol chosen. The area of cover mapping should include various types of cover such as marshland, cropland, grassland, woodland and scrub areas. The map should be fairly accurate to scale. The map is useful over the entire year as the area may be checked over at various seasons to determine the availability of game food. The students can see what type of food the birds are eating. This activity will show that both food and cover are limiting factors in animal populations, especially in winter. Discuss whether plantings for food or cover might increase desirable game birds. Would such plantings interfere with some other good land use?

7. Invite into your classroom your game warden and your local soil technicians and ask them to discuss with you the problem of wildlife conservation of game birds in your area. Have a 4-H club member who has planted a game bird food patch show it to you and let him tell you about it.

(These suggested activities have come from many sources, and it is quite impossible to say where they may have originated. I can claim little originality for most of them. I wish to express my sincere thanks for the use of them in this article.—D. E. A.)

Some Reference Materials

"The Bobwhite Quail, Virginia's Number One Game Bird," *Virginia Wildlife*, XI (July, 1954).

"Conservation Show-Me Trip for Youth Groups." Richmond: Commission of Game and Inland Fisheries. Reprint G-14.

Cottam, Clarence. "Conservation Is Everybody's Business," *Virginia Wildlife*, XXII (January, 1961).

"Descriptions and Life Histories of Virginia's Game Birds," *Virginia Wildlife*, XXI (May, 1960). Reprint C-2.

Harvey, George H. "How To Teach Conservation," *Virginia Wildlife*, XXI (February, 1960). Reprint G-1.

Madson, John, and Kozicky, Ed. "Game and Habitat Analysis," *Virginia Wildlife*, XXII (September, 1961).

Massey, A. B. "What Is Ecology?" *Virginia Wildlife*, XXI (June, 1960).

Mosby, Henry S. "You Can Help In Conservation," *Virginia Wildlife*, XVIII (March, 1957). Reprint G-9.

"Nesting Boxes, Feeding Stations, Bird Houses, Wildlife Shelters and How to Build Them," *Virginia Wildlife*, XVI (January, 1955). Reprint D-1.

Shomon, Joseph J. "Suggested Basic Concepts in Teaching of Conservation." Richmond: Commission of Game and Inland Fisheries. Reprint G-3.

These 16-mm motion pictures in color are available from the game commission free of charge: Animals in Autumn (11 minutes), Animals in Spring (11 min.), Birds Are Interesting (11 min.), The Chain of Life (11 min.), Sharp Eyes (10 min.), A Way of Life (25 min.).

NEXT MONTH: Study 4—Management, Game Birds.

The Word "PURE" Is The Key

By M. W. LOUGH
Elkton, Virginia

OUR astronomers tell us that the moon is devoid of air and water. One of these nights, however, we will be able to see man-made lights blinking on the dark side of the moon, and you can rest assured, then, along with man there will be air and water. Man can do without water only a few days and without air only for a few moments.

About 75 percent of the earth's surface is covered with water. As far as we know, the supply of water on earth is neither increasing nor diminishing. And yet . . .

We are facing a critical shortage of water!

The word *pure* is the key! In our world nothing is destroyed. Our material possessions only change form. There is about the same amount of hydrogen and oxygen now as there was at the beginning, billions of years ago. There is as much water now as there was 200 years ago when our forefathers were hunting springs and clear creeks near which to build their cabins. The word *pure* is the key.

In a recent issue of a local paper appeared the ominous news that the Rhine River in Germany is no longer fit for anything but to carry freight from city to city!

We don't have to go that far from home to see the results of our spendthrift and careless ways. Follow most any stream from its source to the ocean. The beer cans, wastes, and mud were not put there by nature but by man. The dead fish you see floating weren't killed by old age but by man's thoughtlessness. The streams that have no fish in them, ehances are, were once filled with fish, before man came along.

Actually, there is no shortage of water. All of it is still here.

The word *pure* is the key.

Today I used 15,000 gallons of water.

I got up this morning and went through the usual rituals. I shaved, showered and did the other things normal to human lives. I used possibly 100 gallons of water in so doing. During the day I drank possibly six glasses of water. When I came home in the evening I found my wife had washed the clothes, the dishes, scrubbed the floors, cleaned the windows. She used quite a bit of water, too.

My teen-aged daughter washed and rinsed her hair in clear, sparkling water, and took a prolonged shower. A beauty bath, I believe they call it.

If the weather had been warm, I probably would have washed my car and watered the lawn. But, you say, that is nowhere near 15,000 gallons of water. In fact your water bill for the entire month won't touch that.

And that's where you're wrong!

The automobile I used today took many hundreds of gallons of water to produce. The oil that's heating my house took quite a bit, too. The food I eat the processors had to wash and rinse again and again. The wool and cotton I'm consuming required many gallons of the precious fluid.

Yes, today I used 15,000 gallons of water. You did, too. And so did 180,000,000 other Americans, who had better wake up to the ominous fact that our supply of pure water is rapidly diminishing.

The word *pure* is the key.

Conquest, Survival and Enjoyment

(Continued from page 4)

began the tedious task of regenerating a new forest or a better grassland cover.

The wealth of bounty was rich beyond imagination to have been able to create our nation and feed much of the underprivileged world; to have broken from the old feudal precepts of Europe in favor of individual and group initiative. Citizens of the United States have much to be thankful for.

The panorama of national progress, of gross folly and good husbandry, can be read from the land; from the headlands of Maine to the Olympic Peninsula; from the fresh water seas of the Great Lakes to the moss-festooned live oaks of the South; from forests, farms, woodlots, cities, villages, crossroads, smoke signals of industry and massive highways bisecting the countryside.

The Appalachians, the Berkshires, the undulating hills and watersheds, have been prolific in substance, are vigorous in climate, rich in seasonal color and beautiful beyond description. From these regions have come much of the sinew of this nation.

To the West is an equally vigorous land of varied ecology and richness in resources, of fertile vastness and mountain grandeur which none can adequately describe.

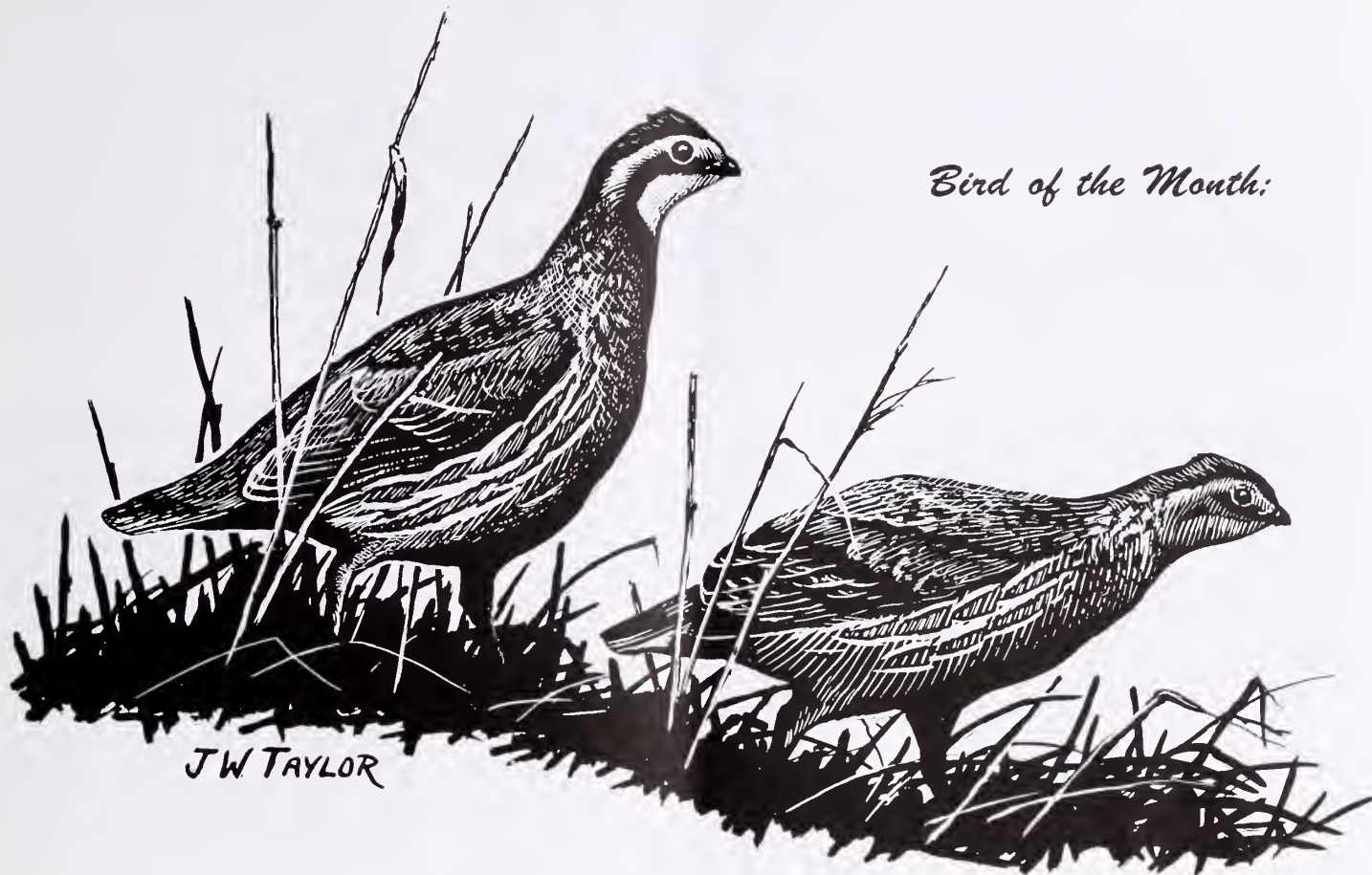
Environment set the stage, and self-reliance and ingenuity became handmaidens of survival. Because of its resources, because of the nature of the people who invaded it and determined to reap its wealth, the United States today stands as a world leader. Can we hold that position?

Our beautiful country is becoming less beautiful, but most insidious are the less beautiful attitudes of slothfulness and indifference. The assumption that we are "God's Chosen" will not hold water. It is a frightening attitude, and can lead only down one road—that of destruction.

Les Pengelly of Montana State University has put it quite well: "Conservation problems are basically of two types—'survival' and 'enjoyment.' Various agencies and many individuals are actively involved in 'survival' conservation—providing food, housing, defense, employment, and the mechanical and political machinery to do the job. 'Enjoyment' conservation, on the other hand, deals with the qualities that enrich our lives—space to live in and space to play in, scenery to enjoy and wild animals to observe, hunt and photograph. As wildlife conservationists we may be said to specialize in 'enjoyment' conservation, but it should also be obvious that we must understand 'survival' conservation if we are to integrate the two activities successfully."

This successful integration of which Pengelly speaks is the crux of the problem. We are now involved in a national program of recreation as never before conceived. Civilizations that have balanced all things with gold have perished, yet recreation cannot feed on itself; the nation's economy must support it. Furthermore, irresponsible leisure time can as effectively destroy our country beautiful as irresponsible industry. Recreation need not involve a bedlam of speed and noise, the obligation of a full bag limit, nor the littering of campsites. Unrelentingly will industry and recreation engrave their stories on the landscape for better or for worse. Only from the land come the secrets of managing the land. Look to the hills of home for knowledge and inspiration.

Bird of the Month:



The Bobwhite Quail

By J. J. MURRAY
Lexington, Virginia

AMONG the most familiar birds of the Virginia countryside is the bobwhite. Every boy learns to imitate the clear whistle by which it sounds out its name; every farmer, when he cuts over a nest in haying time, wonders at the beauty of its eggs.

The call, *bob-white*, or *bob-bob-white*, is one of the stirring sounds of early summer. This is the call by which the bird seeks its mate. Dr. H. L. Stoddard, our leading authority on the species, says that when this call is heard late in the season it comes from cocks that are still unmated.

The bobwhite has many other interesting notes. Sometimes when a covey is feeding through the brush there is a quiet little chatter. The mother has a soft, sweet call to bring her young out when at the sign of danger they have hidden in the grass. One of the most attractive calls is an eager, clear note, something like *co-wee, co-wee*, used to bring together a scattered covey, especially when it is time to go to roost.

The nest is simply and beautifully fashioned in high grass. The bird forms a hollow, lines it with soft dead grass, and then pulls living grass together to form an overhead shelter. The sitting bird sometimes lies so close that one must almost step on her to make her flush.

In this recess the little hen lays from a dozen to 18 eggs. Sometimes twice that many are found, indicating the laying of two females in one nest. The young, which hatch in about 24 days, are beautifully marked with black and white, softened with tawny and chestnut shades. The young leave

the nest as soon as their down is dry.

Nesting is spread over so long a period that many hunters feel sure that two broods are raised. This is most probably not the case, the late nests being second or third attempts after earlier nests have been broken up. In Virginia we have records of hatchings as early as May 11 and of half-grown birds as late as November 15.

The bobwhite seems to be able to stand reasonable hunting except on the edges of its range or where it has become very scarce. Excessive hunting is, of course, detrimental, but no good sportsman will hunt out a covey completely. The coming of the white man and the opening up of the country has certainly been for the good of the species, however many individual birds are taken. The bobwhite has never been a bird of the heavy forests. The clearing of the land has made more suitable territory; waste grain from our crops has provided a more bountiful food supply.

Cultivation so close that there are no brushy fence rows or corners for shelter and for food forms the bird's greatest handicap. A good honeysuckle patch at the edge of a thicket will provide the best kind of protection in winter from snow and predators. Aside from the financial values created by hunting, the bobwhite is economically very useful. The grain it eats is mostly waste from the harvesting. The destruction of weed seeds is probably not too important in light of total seed production. Its most helpful activity is as an insect eater. It consumes a tremendous quantity of grasshoppers, potato bugs, and other harmful species.



YOUTH AFIELD



Edited by DOROTHY ALLEN



Richmond Times-Dispatch Photo

Louisa County contest winners (left to right): Russell Breedon, 3rd place; William Guinn, 2nd place; and Donald Rosson, 1st place. Winners shot mallard ducks on Hidden Acres Game Preserve this past fall as part of their reward for the best food patches.

Hope For Return of Chestnut Trees

In connection with National Wildlife Week last spring, wardens Charlie Spencer and Malcolm Booker made an effort to bring back chestnut trees to Buckingham County. In March they took orders from school children and distributed the trees to them for planting. Out of approximately 600 trees that were planted only two are known to have died. These two did not have wire around the bottom and rabbits ate the bark. This year wardens Booker and Spencer plan to expand the program.

Years ago chestnut trees died out almost completely when most were destroyed by a fungus disease. There are very few left in the country. The blight hit the native chestnut tree in the 1890's before the United States passed the law to prevent trees from being brought in from other countries. The blight was brought into the United States from China by a traveler from New York, with the idea that the Chinese chestnut would improve our native tree. One of these trees was brought in and planted in New York City's Central Park. It had a small blight about the size of a dime and from this the disease spread north through the New England states killing all of the chestnut trees. Then it was carried southwest through the Ohio Valley, continuing southward down the Appalachian Mountains to Georgia. Georgia was the last state to have native chestnuts.

Game Food Patch Contest Winners Reap Reward

Nearly 100 food patches are planted annually by Louisa FFA students. The winners are invited to Hidden Acres Shooting Preserve, owned by Smith and Vern Voght, to hunt. Each of the winners are allowed to shoot two ducks and two ring-neck pheasants.

The popularity of this program has spread to Brunswick County where a similar award program has been set up. The Central, Southside and Redoak Ruritan Clubs jointly sponsor a hunt for the Brunswick County FFA food patch winners.

Hassell Taylor, district game biologist for the Commission, was one of the food patch judges. He said, "We had some of the finest food patches I've ever seen." The Game Commission encourages such programs by providing seed for the food patches.

FFA members use odd strips of land not required in modern farming for their food patch planting programs. Patches provide both cover and food for birds and rabbits. Populations of upland game are increasing in proportion to the number of such patches.



Farmville News Photo by Agee
Malcolm Booker, Buckingham game warden, distributes blight resistant chestnut trees to children at Buckingham Elementary School.

The United States spent thousands of dollars in trying to control the chestnut blight. The State of Pennsylvania alone spent a half million dollars trying to control it, but finally gave up. The blight spread throughout the United States like wildfire, the cause being transportation of chestnut logs, birds and wind.



Rennie Burge and James Joyner display ducks shot on Hidden Acres Game Preserve as part of reward for best game food patches in Brunswick County. Rennie's patch won first and James' second in contest sponsored by Brunswick County Ruritan Clubs.

Pittsylvania Winner

Mike Jones, a fourth year vocational agriculture student at Whitmell High School, was named winner of the 1962-63 Pittsylvania County Wildlife Seed Plot Contest. Runners-up in the contest were Morris Gauldin of Callands and Clyde Simpson of Gretna. Certificates and checks for \$25, \$15 and \$10 were presented the top three by J. D. Dawson, president of the Izaak Walton League. Other top winners in order of finish were Fred Carter, Spring Garden; Wallace Shelton, Climax; Tommy Dawson, Dan River; and G. E. Milam, Renan.

Henry Maxey, vo-ag instructor at Whitmell, said Jones selected for his wildlife seed plot an area near water and a good distance from any building.

Gauldin is a junior at Callands. Gauldin and other FFA boys are not only seeding wildlife plots but also are leaving strips of corn, lespedeza, small grain and other crops to help give food and cover for all wildlife.

Game Warden Sam Pickrel said the educational program sponsored by the Izaak Walton League already has improved the game population in the county and is resulting in larger and healthier animals. The selection of the county winners in the wildlife seed plot contest was made by Kit Shaffer and Hal Myers, representatives of the Commission.



Photo by *The News and The Daily Advance*, Lynchburg

Allen Anderson, a modern Robin Hood of Lynchburg, downed this 210-pound, nine-point buck near Naola in Amherst County. Allen used a 40-pound fiber glass bow and arrow.



Covington Virginian Photo

Wayne McDonald (right) with his first deer—a 10-point buck. Doug Salton (left) bagged his first deer last season. These two boys live at Covington.



Evening Star Photo

Connie Vance of Winchester with her deer. Although she has hunted for several years, this is her first kill.



Photo by Bill Cochran, Roanoke

Nine-year-old Bud Crawford of New Castle, right, explains to Bob Eakin, son of John Eakin, Craig County game warden, how he bagged his 4-point deer.



Photo by *The News and The Daily Advance*, Lynchburg

Thorne McCraw, of Lynchburg, proudly displays the 12-pound turkey he bagged with a second shot from his trusty 16-gauge shotgun. The 13-year-old seventh grader killed Old Tom near Appomattox. Below: Danny Waltrip, an 18-year-old Williamsburg hunter with his 8-point buck.

Richmond News Leader Photo



Covington Virginian Photo

Bill Evans of Covington with his first deer. Below: Smokey Pack, 14-year-old Collinsville hunter, who killed his first deer when he was 12, was one of the first to bring down a buck in Patrick County. His 7-point buck's weight was estimated to be 220 pounds.

Martinsville Bulletin Photo



Staunton Leader Photo

John Stone, 14, of Staunton with his two-point buck.



News Virginian Photos by Charlie Tait

16-year-old John Weaver, III, right, of Falls Church, came through with a double kill when he knocked off a 120-pound bear and a 98-pound deer. Don Fauber Weaver, 12-year-old, helped his brother tote the two animals out of the woods. Below: Richard Curry, 15-year-old Waynesboro youth, right, brought down a 175-pound, 8-point buck near Deerfield. Here he shows his trophy to Richard Henkle.





Edited by HARRY GILLIAM
**North American Wildlife
 Conference**

Detroit, Michigan, will host the North American Wildlife and Natural Resources Conference March 4-6. Over 1,000 wildlife technicians and administrators and others interested in wildlife conservation are expected to attend. This year's theme is "Conservation's Common Frontiers." Technical papers will be presented on all aspects of wildlife research management, and administration.

Songbird Migrations Investigated

Last fall volunteer bird banders cooperated with the U. S. Fish and Wildlife Service in manning a network of bird banding stations along the shores and mountain ridges of North America. The purpose of the concentrated effort was to learn more about the migration of songbirds. Among some of the specific questions to be answered by the study are:

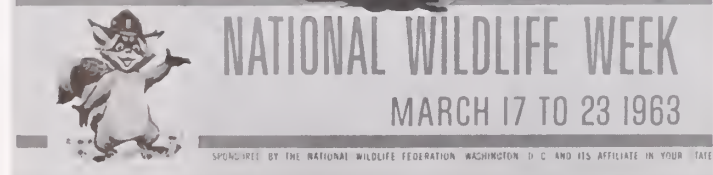
1. How do weather conditions affect the time and route of migrations?

2. To what extent are migrations concentrated?
3. How important are large-scale losses when migrating birds are driven out to sea?
4. How do birds move in a single flight?

As many as 1,349 birds were banded and checked during a single day at one station. The recoveries of these banded birds will be correlated with the amount of body fat and the prevailing weather conditions.

Pesticides To Be Stressed - - Theme of National Wildlife Week

**CHEMICAL PESTICIDES ARE
 POISON**

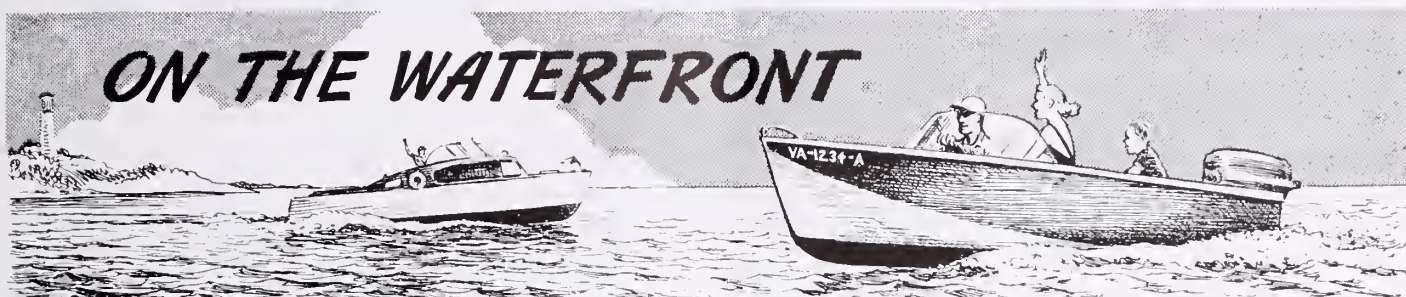


"Pesticides Are Poison—Handle With Care" will be the theme of Wildlife Week, 1963, to be observed March 17-23. Public attention will be focused during this period on the serious threat to wildlife posed by the indiscriminate or careless use of these new miracle chemicals.

Among the problems to be stressed are (1) the use of concentrations of these chemicals far in excess of that necessary or recommended, (2) the careless contamination of streams through spraying or the washing of equipment and containers and (3) the use of high potency chemicals where less dangerous substances would exercise adequate control of the pest involved. The use of biological control and pest-resistant strains of crops will be stressed where practical.

Held during the first week of spring each year since first proclaimed by President Roosevelt in 1938, National Wildlife Week serves to focus public attention on the importance of natural resources conservation and to spotlight specific conservation problems. It is sponsored by the National Wildlife Federation in cooperation with the Virginia Wildlife Federation, its state affiliate.

J. Stoney Drake Jr., of Norfolk, Executive Secretary of the Virginia Wildlife Federation, was named 1963 State Wildlife Week Chairman for Virginia. Carl A. Wiberg of Alexandria, Glenn Frum of Fairfax and C. B. Booth of Staunton were appointed to a Wildlife Week committee which will assist in planning and coordinating the observance. Harry Gillam of the Virginia Commission of Game and Inland Fisheries was selected to coordinate that agency's participation in the event. Virginia Game Wardens and members of the forty-one affiliated Virginia Wildlife Federation Clubs will work closely together to bring the message of Wildlife Week to the citizens of the Old Dominion.



Edited by JIM KERRICK

Notice

If your renewal notice for boat registration has not been received by May 1, 1963, please request renewal application from the Boat Section, Virginia Commission of Game and Inland Fisheries, P. O. Box 1642, Richmond 13, Virginia.

Fishing and Boating Access Evaluation

The Virginia Commission of Game and Inland Fisheries started the boating and fishing access program in 1958, and since that date 34 public access areas have been constructed and 14 additional areas have been approved for construction. Eleven of the completed ramps and five of those approved for immediate construction are located on tide-water or salt water areas of the state and designed for general boating use. The remaining areas were developed for fishing and hunting access to inland waters. Boat registration fees are used to finance ramps built for general boating and hunting and fishing license fees for the remaining ramps. The 1962-1963 and 1963-1964 budget lists \$30,000 to be spent for fishing access ramps and \$10,000 boating access ramps annually. The average cost of fishing access areas has been approximately \$2,500 each, and boating access sites approximately \$3,500. Twelve fishing access sites and three boating sites are programmed each year.

Priority in site selection is given to those waters of the state where, through posting or lack of adequate privately financed facilities, a definite lack of public access may be shown. Care is taken not to locate access areas near established commercial marinas affording adequate public facilities.

In these areas, especially at bridge crossings, every effort is being made to acquire land for immediate or future public access development.

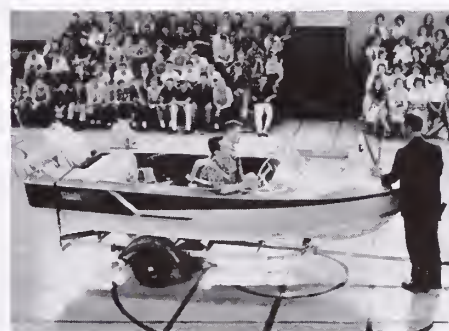
The Commission's public access areas now available are as follows:

Location	Body of Water	Hyw. Completed	Year
Accomack Co. Saxis	Pocomoke S.	695	1961
Chincoteague	Chincoteague Channel	175	1961
Onancock	Onancock Cr.	179	1961
Queens Sound	Chincoteague Inlet	175	1961
Wisharts Point	Bogues Bay	695	1961
Appomattox Co. Bent Creek	James River	60	1959
Campbell Co. Brookneal	Staunton R.	501	1962
Long Island	Staunton R.	761	*
Clarke Co. Castleman's Ferry	Shen. R.	7	1961
Locke's Ldg.	Shen. R.	621	1959
Cumberland Co. Columbia	James River	690	1962
Fluvanna Co. Crofton Bridge	Rivanna R.	600	1962
Palmyra	Rivanna R.	15	1962
Halifax Co. Hyco River Ldg.	Kerr Res.	58	1962
Mathews Co. Gwynn's Island	Milford Haven Bay	633	1963
Middlesex Co. Saluda	Urbanna Cr.	618	1962
Northampton Co. Oyster	Mockhorn Bay	639	1962
Red Bank Ldg.	Red Bank Cr.	617	1962
Northumberland Cooper	Wicomico R.	707	1962
Nelson Co. Wingina Ldg.	James River	56	1962
Page Co. Foster's Ldg.	S. F. Shen.	661	1958
Grove Hill Ldg.	S. F. Shen.	650	1959
White House Bridge	S. F. Shen.	211	1961
Powhatan Co. Watkins Ldg.	James River	652	1961
Princess Anne Co. Back Bay	Back Bay		1961
Knotts Island	Back Bay	664	1961
Richmond Co. Simonson Ldg.	Morattico Cr.	606	1962
Rockingham Co. Elkton Ldg.	S. F. Shen.	33	1961
Rockbridge Co. Glasgow Ldg.	Maury R.	City St.	1962
Shenandoah Co. Chapman's Ldg.	N. F. Shen.	672	1961
Spotsylvania Co. Mott's Run Ldg.	Rappahannock	618	1962
Warren Co. Bentonville	S. F. Shen.	613	1961
Karo Ldg.	S. F. Shen.	340	1962
Morgan's Ford	Shen. River	624	1961
Riverton Ldg.	N. F. Shen. River	637	1962

* To be acquired 1962-1963.

Notice To Boat Owners

Renewal notices for reregistration of all numbered boats will be mailed in late March. Those with incorrect mailing addresses *will not be delivered* but will be returned to the Commission of Game and Inland Fisheries. Boat owners who have *changed their address, OR changed the county or city where their boat is principally kept, must* notify the Boat Section, Box 1642, Richmond, Va. of the change. Failure to do this will mean a delay in receipt of the new registration card. *All present cards expire June 30, 1963.*



Young boating enthusiasts receive instruction in safe boating, seamanship and courtesy afloat.

Boating Classes Available

Now is the time to contact your coast guard auxiliary and power squadron to take a course in safe boating.

The right training sessions spread over a two month period afford an excellent opportunity to learn the "rules of the road," channel markings and what they mean, how to read navigational charts and other useful knowledge. Taking this course may mean the difference between having a safe trip or disaster.

Remember boating is a safe sport providing everyone practices good seamanship and courtesy afloat. Let's make the 1963 boating season in Virginia a safe season with no accidents.

Virginia Boating Safety Act Regulations:

a. Motorboat Numbering Pattern

(1) The motorboat number assigned shall consist of the symbol "VA" identifying the State followed by not more than four arabic numerals and two capital letters, in sequence, separated by a hyphen or equivalent space in accordance with the serials numerically and alphabetically. As example: "VA-1-A" or "VA-1234-BB".

* * *

b. Display of Motorboat Numbers

The numbers shall be painted on or attached to each side of the forward half of the vessel to which issued in such a position as to provide clear legibility for identification. The numbers shall read from left to right and shall be in block characters of good proportion not less than 3 inches in height. The numbers shall be of a color which will contrast with the color of the background and so maintained as to be clearly visible and legible; i. e., dark numbers on a light background or light numbers on a dark background.

c. Application For Certificate of Number

The application for certificate of number shall contain the following information: name, address, citizenship and year of birth of owner, county or city where boat is principally kept, present number on boat (if any), hull material (wood, steel, aluminum, plastic, other), type of propulsion (outboard, inboard, other), type of fuel (gas, diesel, other), make and year built (if known), length overall, statement as to use (pleasure, livery, dealer, manufacturer, commercial passenger, commercial fishing, commercial other), a statement of ownership by applicant and signature of owner.

d. Information Shown on Certificate of Number

The certificate of number shall show the following: name and address of owner, number issued, make, hull material, type of propulsion, length overall, use, expiration date and signature of owner.

e. Reporting of Boating Accidents:

The operator(s) of any boat(s) involved in a collision, accident

or other casualty resulting in death or disappearance of any person or any injury causing incapacity for a period in excess of 72 hours, or damage to property in excess of one hundred dollars (\$100.00) shall, within 10 days, after such collision, accident or other casualty, file in writing with the Commission a full description of the accident including the following: (1) The number and/or name of vessel(s) involved. (2) The locality where the accident occurred. (3) The time and date when the accident occurred. (4) Weather and water conditions at time of accident. (5) The name, address, age and boat operating experience of the operator of the reporting vessel. (6) The names and addresses of operators of other vessels involved. (7) The names and addresses of the owners of vessels or property involved. (8) The names and addresses of any person or persons injured or killed. (9) The nature and extent of injury to any person or persons. (10) A description of damage to property (including vessels) and estimated cost of repairs. (11) A description of the accident (including opinions as to the cause). (12) The length, propulsion, horsepower, fuel and construction of the reporting vessel. (13) Names and addresses of known witnesses.

f. Notification of Transfer of Ownership

Whenever a motorboat for which there exists a certificate of number changes ownership, the seller shall report such transfer to the Commission on form provided, accompanied by that existing certificate of number.

g. Application For Duplicate Certificate of Number

In the event of loss, a duplicate certificate of number may be applied for on form provided accompanied by fee of fifty cents. Not more than one certificate for a motorboat number may be in existence at any time.

h. Boating Safety Equipment

The Federal regulations applicable to boating safety equipment required to be carried in or on motorboats (as defined in the Motorboat Act of 1940, 54 Stat. 166, as amended, 46 U. S. C., Section 526) operating on the navigable waters of the United States as set forth in Part 25 of the Code of Federal Regulations and in copies of the Federal Register supplemental thereto are hereby adopted by the Commission as its regulations.

MOTORBOAT SAFETY EQUIPMENT REQUIREMENTS

Class	Life Preservers	Fire Extinguishers*		Ventilators	Flame Arrestors	Horn or Whistle	Bell
A Less than 16 feet	One Coast Guard-approved life preserver, buoyant vest, ring buoy or buoyant cushion in serviceable condition for each person.	Without fixed system	With fixed system	Two or more ventilators with cowls or equivalent capable of removing gases from bilges and compartments decked over 4/25/40. Not required if majority of bilges and fuel tanks are exposed at all times. REQUIRED ONLY ON GASOLINE ENGINES	Flame arrestors required after 4/25/40 on carburetors of all engines except outboards. Installations prior to 11/19/52 need not meet detailed requirements so long as they are in good condition. REQUIRED ONLY ON GASOLINE ENGINES	None	None
1 16 feet to less than 26 feet		1 B-1	None			Hand, mouth or power; 2 seconds, 1/2 mile	None
2 26 feet to less than 40 feet		2 B-1 or 1 B-11	1 B-1			Hand or power; 2 seconds, 1 mile	Required. To produce clear note.
3 40 feet to less than 65 feet		3 B-1 or 1 B-11 and 2 B-1	2 B-1 or 1 B-11			Power; 2 seconds, 1 mile	Required. To produce clear note.

Fire Extinguisher Classification			
Type	Foam (min. gal.)	Carbon Dioxide (min. pounds)	Dry Chemical (min. pounds)
B-1	1 1/4	4	2
B-11	2 1/2	15	10

*Outboard motorboats of less than 26 feet in length, of open construction and not carrying passengers for hire, are not required to carry fire extinguishers. Boats are not of open construction if they have a closed compartment or as much as 1/3 of the length decked over.

Note: The above regulations were adopted by the Commission of Game and Inland Fisheries in accordance with provisions of the Boating Safety Act of 1960, as amended, which was printed in the last issue of VIRGINIA WILDLIFE. Reprints of both the Act and the foregoing Regulations are available on request.

Add to Your Library on Virginia's Wildlife

ENJOY THESE COLORFUL PUBLICATIONS MADE AVAILABLE THROUGH THE
COMMISSION OF GAME AND INLAND FISHERIES AT NOMINAL COST



Birdlife of Virginia 25¢

This 88 page booklet is an excellent introduction to bird study and appreciation. With the aid of six pages of full color illustrations, the book gives basic information on Virginia's common birds including game species, song birds and birds of prey.



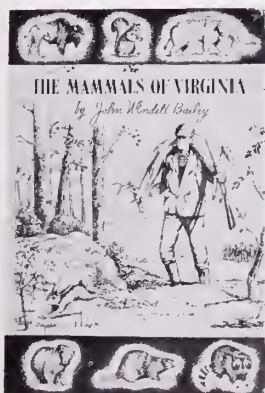
Freshwater Fishing and Fishlife in Virginia 25¢

Over one hundred pages filled with valuable information on Virginia's freshwater fish and fishing. In addition to a species by species coverage of the state's freshwater fishes, the booklet has sections on fish management, where and how to fish, cooking fish, and a list of the public fishing waters of the state.
Six pages of full color illustrations.

Bird Charts \$2.00



This set of four 20" by 30" full color charts includes most of Virginia's common birds. One chart is devoted to game birds including waterfowl, one depicts the common hawks, one covers the summer resident song birds and the other shows a similar group of winter residents.



Reduced!

The Mammals of Virginia

BY J. W. BAILEY

\$2.50

Here at HALF PRICE is a serious coverage of the state's mammals, both wild and domestic, including their history, importance, range, habits and identifying characteristics. With the Commission's book on Virginia's mammals out of print, *Virginia Wildlife* has arranged to make available to its readers, at this special price, Doctor Bailey's excellent book which originally retailed for five dollars.



Wildlife Charts \$2.00

A set of four 20" by 30" full color charts which accurately depict the state's common mammals, owls, and summer birds. These are large enough for classroom use yet beautiful enough for framing.



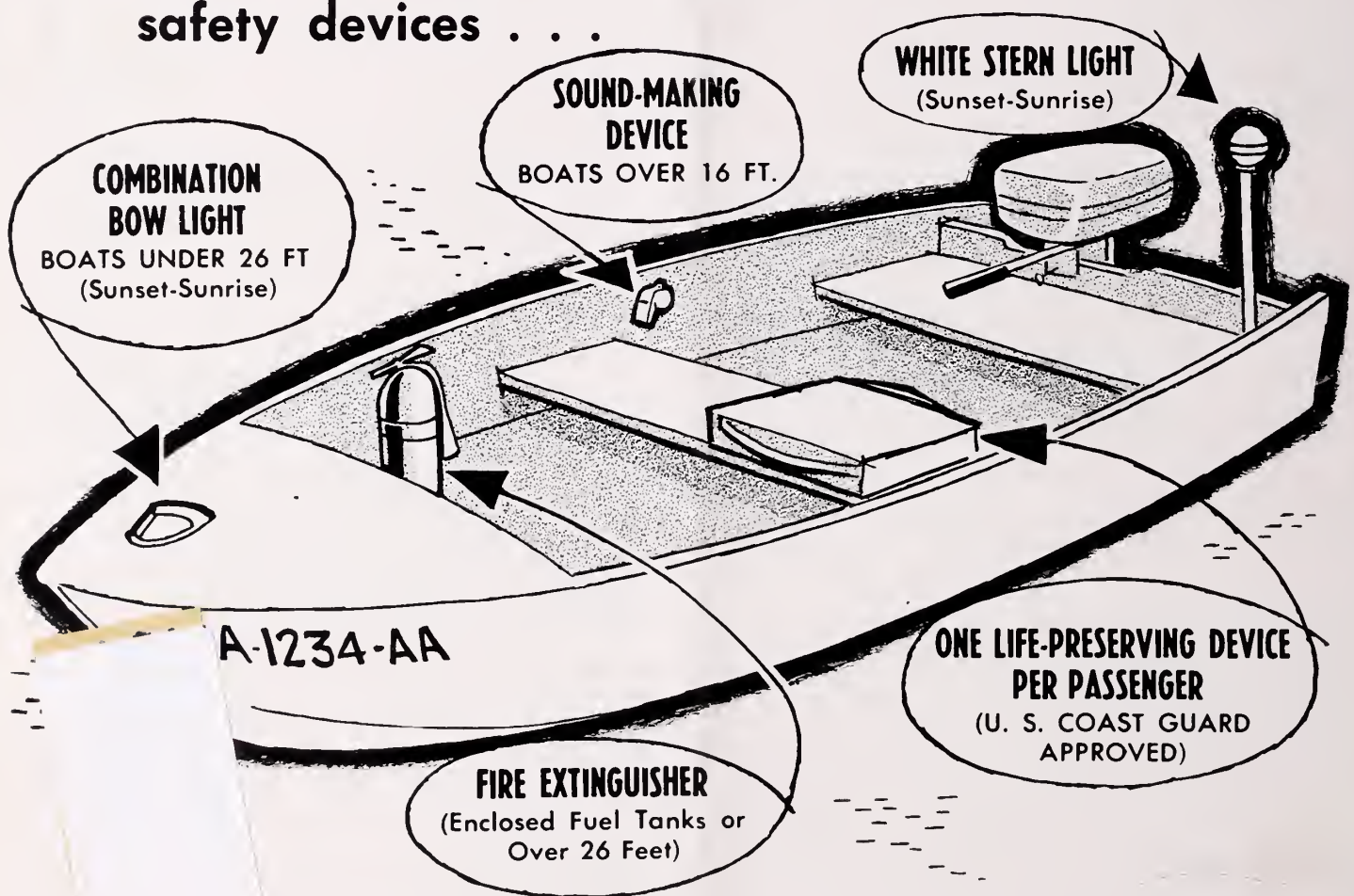
An order blank giving information on these and over 75 other publications which may be obtained free from the

COMMISSION OF GAME AND INLAND FISHERIES
P. O. BOX 1642
RICHMOND 13, VIRGINIA

BOAT OWNERS!

IS YOUR MOTORBOAT PROPERLY EQUIPPED?

Under the Virginia Boating Safety Act, all motorboats must be equipped with certain safety devices . . .



ADDITIONAL INFORMATION
On Boating Safety Regulations
Will Be Found On Page 26